

Prospectus Supplement
(To the Prospectus dated August 19, 2021)



5,360,000 Shares of Common Stock

33,810 Shares of Preferred Stock

4,300,000 Shares of Common Stock Underlying Pre-funded Warrants

We are offering (i) 5,360,000 shares of our common stock, par value \$0.01 per share, or the Common Shares, (ii) 33,810 shares of our Series C Mirroring Preferred Stock, par value \$0.01 per share and stated value of \$0.01 per share, or the Preferred Shares, and (iii) 4,300,000 shares of common stock underlying pre-funded warrants to purchase shares of common stock, or the Pre-funded Warrants, to a single institutional investor pursuant to this prospectus supplement, the accompanying prospectus and a securities purchase agreement, dated September 30, 2022, by and between us and the investor signatory thereto, or the Securities Purchase Agreement. The Preferred Shares will not be convertible into shares of our common stock and will automatically terminate and cease to be outstanding following the consummation of a reverse stock split of the Company's shares of common stock. Each Pre-funded Warrant will have an exercise price of \$0.01, will be immediately exercisable and may be exercised at any time until all of the Pre-Funded Warrants are exercised in full. Each Common Warrant will have an exercise price of \$0.377, will become exercisable six months following the date of issuance and will expire five years after their initial exercise date.

We have engaged H.C. Wainwright & Co., LLC, or the Placement Agent, as our exclusive placement agent in connection with this offering. The Placement Agent has agreed to use its reasonable best efforts to sell the securities offered by this prospectus supplement and the accompanying prospectus. The placement agent is not purchasing or selling any shares offered by this prospectus supplement and the accompanying base prospectus. See "Plan of Distribution" beginning on page S-20 of this prospectus supplement for more information regarding these arrangements.

In a concurrent private placement, we are also issuing to the institutional investor, for no additional consideration, warrants to purchase 9,660,000 shares of our Common Stock, or the Common Warrants. Each Common Warrant will have an exercise price of \$0.377, will be exercisable beginning on the six-month anniversary of the date of issuance, or the Initial Exercise Date, and will expire five and one half years from the Initial Exercise Date. The Common Warrants and the shares of our Common Stock issuable upon exercise of the Common Warrants are not registered under the Securities Act of 1933, as amended, or the Securities Act, are not being offered pursuant to this prospectus supplement and the accompanying prospectus, and are being offered pursuant to the exemption provided in Section 4(a)(2) under the Securities Act and Rule 506(b) promulgated thereunder.

Our common stock is traded on the Nasdaq Capital Market under the symbol "OPGN." On September 30, 2022, the closing price of our common stock was \$0.286 per share. There is no established public trading market for the Preferred Shares, the Pre-funded Warrants and the Common Warrants being offered in this offering, and we do not expect a market to develop. In addition, we do not intend to apply for listing the Preferred Shares, the Pre-funded Warrants and the Common Warrants on any national securities exchange or other trading market. Without an active market, the liquidity of the Preferred Shares, the Pre-funded Warrants and the Common Warrants will be limited.

Investing in our securities involves a high degree of risk, including that the trading price of our common stock has been subject to volatility. Please read the information contained in or incorporated by reference under the heading “Risk Factors” in this prospectus supplement and in the accompanying prospectus.

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

	Per Common Share	Per Preferred Share	Per Share Underlying Pre- funded Warrant	Total
Offering price	\$ 0.35	\$ 0.01	\$ 0.34	\$ 3,381,338.10
Placement agent fees	\$ 0.021	\$ 0.0006	\$ 0.021	\$ 202,880.29
Proceeds before expenses to us	\$ 0.329	\$ 0.0094	\$ 0.319	\$ 3,178,457.81

- (1) We have agreed to pay the Placement Agent an aggregate cash placement fee equal to 6.0% of the gross proceeds in this offering. For additional information on the placement agent’s compensation, see “Plan of Distribution” beginning on page S-20 of this prospectus supplement

Neither the Securities and Exchange Commission nor any other regulatory body has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus supplement and the accompanying prospectus. Any representation to the contrary is a criminal offense.

H.C. Wainwright & Co.

The date of this prospectus supplement is September 30, 2022

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ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement and the accompanying prospectus are part of a “shelf” registration statement on Form S-3 (File No. 333-258646) that we filed with the Securities and Exchange Commission, or the SEC, on August 9, 2021, and that was declared effective on August 19, 2021.

This document is in two parts. The first part is this prospectus supplement, which describes the terms of this offering and also adds to and updates information contained in the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and the accompanying prospectus. The second part is the accompanying prospectus, which gives more general information about the securities we may offer from time to time under our shelf registration statement, some of which does not apply to the securities offered by this prospectus supplement. Generally, when we refer to this prospectus, we are referring to both parts of this document combined. To the extent there is a conflict between the information contained in this prospectus supplement, on the one hand, and the information contained in the accompanying prospectus or any document incorporated by reference herein or therein, on the other hand, you should rely on the information in this prospectus supplement.

You should read this prospectus supplement, the accompanying prospectus, the documents incorporated by reference in this prospectus supplement and the accompanying prospectus and any free writing prospectus that we have authorized for use in connection with this offering before making an investment decision. You should also read and consider the information in the documents referred to in the sections of this prospectus supplement entitled “Where You Can Find More Information” and “Information Incorporated by Reference.”

We are not making an offer to sell the securities covered by this prospectus supplement in any jurisdiction where the offer or sale is not permitted.

The information appearing in this prospectus supplement, the accompanying prospectus, the documents incorporated by reference in this prospectus supplement and the accompanying prospectus and any free writing prospectus that we have authorized for use in connection with this offering is accurate only as of its respective date, regardless of the time of delivery of the respective document or of any sale of securities covered by this prospectus supplement. You should not assume that the information contained in or incorporated by reference in this prospectus supplement or the accompanying prospectus, or in any free writing prospectus that we have authorized for use in connection with this offering, is accurate as of any date other than the respective dates thereof.

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

We have not authorized anyone to provide you with information other than the information that we have provided or incorporated by reference in this prospectus supplement and your reliance on any unauthorized information or representation is at your own risk. This prospectus supplement may be used only in jurisdictions where offers and sales of these securities are permitted. You should assume that the information appearing in this prospectus supplement is accurate only as of the date of this prospectus supplement and that any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus, or any sale of our common stock. Our business, financial condition and results of operations may have changed since those dates.

Note Regarding Trademarks

We own various U.S. federal trademark registrations and applications and unregistered trademarks and service marks, including OpGen®, Curetis®, Unyvero®, ARES® and ARES GENETICS®, and Acuitas®. All other trademarks, servicemarks or trade names referred to in this prospectus supplement are the property of their respective owners. Solely for convenience, the trademarks and trade names in this prospectus are sometimes referred to without the ® and ™ symbols, but such references should not be construed as any indicator that their respective owners will not assert, to the fullest extent under applicable law, their rights thereto. We do not intend the use or display of other companies’ trademarks and trade names to imply a relationship with, or endorsement or sponsorship of us by, any other companies, products or services.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement contains “forward-looking statements” within the meaning of Section 27A of the Securities and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. All statements, other than statements of historical fact, included or incorporated in this prospectus regarding our strategy, future operations, collaborations, intellectual property, cash resources, financial position, future revenues, projected costs, prospects, plans, and objectives of management are forward-looking statements. The words “believes,” “anticipates,” “estimates,” “plans,” “expects,” “intends,” “may,” “could,” “should,” “potential,” “likely,” “projects,” “continue,” “will,” and “would” and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words.

We have based these forward-looking statements on our current expectations and projections about future events and trends that we believe may affect our financial condition, results of operations, strategy, short- and long-term business operations and objectives, and financial needs. These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those described under the heading “Risk Factors.” In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances included herein may not occur, and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements. Given these uncertainties, you should not place undue reliance on these forward-looking statements. Forward-looking statements include, but are not limited to, statements about:

- the continued impact of the COVID-19 pandemic on our business and operations;
- our liquidity and working capital requirements, including our cash requirements over the next 12 months;
- our use of proceeds from capital financing transactions;
- our ability to maintain compliance with the ongoing listing requirements for the Nasdaq Capital Market;
- the completion of our development efforts for our Unyvero UTI and IJI panels, Unyvero A30 RQ platform and ARESdb and the timing of regulatory submissions;
- our ability to establish a market for and sell our Acuitas AMR Gene Panel test for use with bacterial isolates;
- our ability to obtain regulatory clearance for and commercialize our product and services offerings;
- our ability to sustain or grow our customer base for our Unyvero IVD and Acuitas AMR Gene Panel products as well as our current research use only products;
- regulations and changes in laws or regulations applicable to our business, including regulation by the FDA, European Union, including pending IVDR requirements, and China’s NMPA;
- our ability to further integrate the OpGen, Curetis, and Ares Genetics businesses;
- our ability to satisfy our debt obligations;
- adverse effects on our business condition and results of operations from general economic and market conditions and overall fluctuations in the United States and international markets, including deteriorating market conditions due to investor concerns regarding inflation and hostilities between Russia and Ukraine;
- anticipated trends and challenges in our business and the competition that we face;
- the execution of our business plan and our growth strategy;
- our expectations regarding the size of and growth in potential markets;

- our opportunity to successfully enter into new collaborative or strategic agreements;
- compliance with the U.S. and international regulations applicable to our business; and
- our expectations regarding future revenue and expenses.

Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, level of activity, performance or achievements. In addition, neither we nor any other person assumes responsibility for the accuracy and completeness of any of these forward-looking statements. These risks should not be construed as exhaustive and should be read in conjunction with our other disclosures, including but not limited to the risks described under the heading “Risk Factors.” Other risks may be described from time to time in our filings made under the securities laws. New risks emerge from time to time. It is not possible for our management to predict all risks. All forward-looking statements in this prospectus speak only as of the date made and are based on our current beliefs and expectations. We undertake no obligation to update or revise any forward-looking statement, whether as a result of new information, future events or otherwise.

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights information contained elsewhere in this prospectus. This summary does not contain all of the information you should consider before investing in our securities. You should read this entire prospectus carefully, especially the “Risk Factors” section beginning on page S-6 and our financial statements and the related notes incorporated by reference into this prospectus, before making an investment decision. As used in this prospectus, the terms “OpGen,” “the Company,” “we,” “us,” and “ours” refer to OpGen, Inc.

OpGen Overview

We are a precision medicine company harnessing the power of molecular diagnostics and informatics to help combat infectious disease. Along with subsidiaries, Curetis GmbH and Ares Genetics GmbH, we are developing and commercializing molecular microbiology solutions helping to guide clinicians with more rapid and actionable information about life threatening infections to improve patient outcomes, and decrease the spread of infections caused by multidrug-resistant microorganisms, or MDROs. Our current product portfolio includes Unyvero, Acuitas AMR Gene Panel, and the ARES Technology Platform including ARESdb, NGS technology and AI-powered bioinformatics solutions for antibiotic response prediction including ARESiss, ARESid, and AREScloud, as well as the Curetis CE-IVD-marked PCR-based SARS-CoV-2 test kit.

Our focus is on our combined broad portfolio of products, which include high impact rapid diagnostics and bioinformatics to interpret antimicrobial resistance (AMR) genetic data. We will continue to develop and seek FDA and other regulatory clearances or approvals, as applicable, for additional diagnostic tests. We will continue to offer the FDA-cleared Unyvero LRT and LRT BAL Panels, Acuitas AMR Gene Panel diagnostic test, as well as the Unyvero UTI Panel as a research-use-only products to hospitals, public health departments, clinical laboratories, pharmaceutical companies and contract research organizations. We are also continuing to commercialize our CE Marked Unyvero Panels in Europe and other global markets through distributors.

The Company currently expects to focus on the following products for lower respiratory infection, urinary tract infection and invasive joint infection:

- The Unyvero Lower Respiratory Tract, or LRT, test (e.g. for bacterial pneumonias) is the first U.S. Food and Drug Administration, or FDA, cleared test that can be used for the detection of more than 90% of common causative agents of hospitalized pneumonia. According to the National Center for Health Statistics (2018), pneumonia is a leading cause of admissions to the hospital and is associated with substantial morbidity and mortality. The Unyvero LRT automated test detects 19 pathogens within less than five hours, with approximately two minutes of hands-on time and provides clinicians with a comprehensive overview of 10 genetic antibiotic resistance markers. We have commercialized the Unyvero LRT BAL test for testing bronchoalveolar lavage, or BAL, specimens from patients with lower respiratory tract infections following FDA clearance received by Curetis in December 2019. The Unyvero LRT BAL automated test simultaneously detects 20 pathogens and 10 antibiotic resistance markers, and it is the first and only FDA-cleared panel that also includes *Pneumocystis jirovecii*, a key fungal pathogen often found in immunocompromised patients (such as AIDS and transplant patients) that can be difficult to diagnose, as the 20th pathogen on the panel. We believe the Unyvero LRT and LRT BAL tests have the ability to help address a significant, previously unmet medical need that causes over \$10 billion in annual costs for the U.S. healthcare system, according to the Centers for Disease Control, or CDC.
- Following registration of the Unyvero instrument system as an IVD for the Chinese market in early 2021, we are supporting our strategic partner Beijing Clear Biotech (BCB) in pursuing execution of a supplemental clinical trial with the Unyvero HPN test. As requested by the Chinese regulatory authority NMPA, this study is geared towards generating additional data in China that will complement a larger data set with data from abroad compiled from other clinical and analytical studies performed in the past.

- The Unyvero Urinary Tract Infection, or UTI, test, which is CE-IVD marked in Europe, is currently being made available to laboratories in the United States as a research use only or RUO kit. The test detects a broad range of pathogens as well as antimicrobial resistance markers directly from native urine specimens. We initiated a prospective multi-center clinical trial for the Unyvero UTI in the United States in the third quarter of 2021 and completed enrollment at the end of the third quarter of 2022 and presented positive data from an interim analysis in Q1 of 2022.
- The Unyvero Invasive Joint Infection, or IJI, test, which is a test specifically being developed for the U.S. market on the Unyvero A30 platform, has also been selected for analytical and clinical performance evaluation including clinical trials towards a future U.S. FDA submission. Microbial diagnosis of IJI is difficult because of challenges in sample collection, usually at surgery, and patients being on prior antibiotic therapy which minimizes the chances of recovering viable bacteria. We believe that Unyvero IJI could be useful in identifying pathogens as well as their AMR markers to help guide optimal antibiotic treatment for these patients.
- On September 30, 2021, we received clearance from the FDA for our Acuitas AMR Gene Panel for bacterial isolates. The Acuitas AMR Gene Panel detects 28 genetic antimicrobial resistance, or AMR, markers in isolated bacterial colonies from 26 different pathogens. We believe the panel provides clinicians with a valuable diagnostic tool that informs about potential antimicrobial resistance patterns early and supports appropriate antibiotic treatment decisions in this indication. We expect to commercialize the Acuitas AMR Gene Panel for isolates to customers in the United States.
- We are also developing novel bioinformatics tools and solutions to accompany or augment our current and potential future IVD products and may seek regulatory clearance for such bioinformatics tools and solutions to the extent they would be required either as part of our portfolio of IVD products or even as a standalone bioinformatics product.

Special Meeting of Stockholders

Promptly after the closing of this offering, the Company will call a special meeting of its stockholders, or the Special Meeting, to consider the approval of an amendment to the Company's Amended and Restated Certificate of Incorporation, as amended, to effect a reverse stock split at a ratio of not less than five-to-one and not more than twenty-to-one, or the Reverse Stock Split, such ratio and the implementation and timing of such Reverse Stock Split to be determined in the discretion of our Board of Directors. The Preferred Shares purchased in this offering will be outstanding and entitled vote at the Special Meeting, and will be entitled to 100,000 votes for each share of Preferred Stock outstanding as of the record date for the Special Meeting. The votes of the holders of the Preferred Stock will be counted with the shares of common stock as a class on the proposed Charter amendment.

The approval of the amendment to the Charter to effect the Reverse Stock Split will require the affirmative votes of a majority of the combined voting power of the outstanding shares of common stock and Preferred Shares, voting together, present in person or represented by proxy and entitled to vote on the proposal. The holders of common stock have the right to cast one (1) vote per share of common stock on this proposal. The holders of Preferred Stock have the right to cast 100,000 votes per share of Preferred Stock on this proposal, provided that, pursuant to the Securities Purchase Agreement, the holders of Preferred Stock agreed that such votes must be cast in the same proportion as the aggregate shares of common stock are voted on this proposal (excluding any shares of common stock that are not voted). Therefore, the holders of a significant portion of the common stock outstanding must vote their shares at the Special Meeting in order for the proposal to pass.

Recent Developments

Reverse Stock Split

On February 28, 2022, we received a notice from The Nasdaq Stock Market LLC, or Nasdaq, notifying us that, based upon the closing bid price of our common stock, for the 30 consecutive business days prior to the notice, the Company no longer met the requirement to maintain a minimum closing bid price of \$1.00 per share, as set forth in Nasdaq Listing Rule 5550(a)(2). The Company was originally granted 180 calendar days, or until August 29, 2022, to regain compliance with the minimum bid price rule. On August 30, 2022, Nasdaq notified the Company that it had been granted an additional 180-calendar day compliance period, or until February 27, 2023, to regain compliance with the Minimum Bid Price Rule. In connection with the grant of such additional compliance period, the Company provided notice to Nasdaq that it intended to cure the bid price deficiency by effecting a reverse stock split, if necessary, prior to the end of the compliance period. While we have until February 27, 2023 to regain such compliance, we do not believe we will be able to do so without implementing a reverse stock split.

If we are not in compliance with the minimum bid price requirement by February 27, 2023, we can appeal Nasdaq's determination to a hearings panel in order to present a plan to regain compliance. There can be no assurances however that we will be granted any relief or additional time to regain compliance with the minimum bid price requirement and do not believe that any additional grace period will allow the Company to comply with the minimum closing bid price requirement unless a reverse stock split is not approved.

Warrant Amendment Agreement

In connection with this offering, the Company also entered into a warrant amendment agreement, or the Warrant Amendment Agreement, with the investor in this offering. Under the Warrant Amendment Agreement, the Company agreed to amend certain existing warrants to purchase up to 14,829,751 shares of common stock that were previously issued in 2018 and 2021 to such investor, with exercise prices ranging from \$2.05 to \$65.00 per share, or the Existing Warrants, in consideration for their purchase of the securities in this offering, as follows: (i) lower the exercise price of the Existing Warrants to \$0.377 per share, (ii) provide that the Existing Warrants, as amended, will not be exercisable until six months following the closing date of this offering, and (iii) extend the original expiration date of the Existing Warrants by five and one-half years following the close of this offering.

Company Information

OpGen, Inc. was incorporated in Delaware in 2001. On April 1, 2020, we completed a business combination transaction with Curetis GmbH. Our principal executive office is located at 9717 Key West Avenue, Suite 100, Rockville, MD 20850, and our telephone number is (301) 869-9683. We also have operations in Germany and Austria. Our website address is www.opgen.com. We do not incorporate the information on or accessible through our website into this prospectus, and you should not consider any information on, or that can be accessed through, our website as part of this prospectus supplement.

THE OFFERING

Securities offered by us	5,360,000 Common Shares 33,810 Preferred Shares 4,300,000 shares of common stock underlying the Pre-funded Warrants at an exercise price of \$0.01 per share. Each Pre-Funded Warrant will be exercisable immediately upon issuance and will not expire until exercised in full.
Common stock to be outstanding after this offering	56,283,618 shares of Common Stock (assuming the issuance of all the shares underlying the Pre-funded Warrants, but not assuming the exercise of the Common Warrants)
Use of proceeds	We currently intend to use the net proceeds from this offering to: (i) continue commercialization of the FDA-cleared Acuitas AMR Gene Panel test for isolates in the U.S.; (ii) commercialize our other products with a focus on the Unyvero platform and diagnostic tests; (iii) support further development and commercialization of the Ares Genetics database; (iv) support directed sales and marketing efforts to the customers and collaborators for our products and services; (v) invest in manufacturing and operations infrastructure to support sales of products; and (vi) the repayment of certain outstanding indebtedness of the Company. We intend to use the remaining net proceeds for working capital and other general corporate purposes. See "Use of Proceeds" on page S-11.
Concurrent Private Placement	In a concurrent private placement, we are selling to the investor purchasing the Common Shares, Preferred Shares and Pre-funded Warrants in this offering, Common Warrants to purchase 9,660,000 of our shares of Common Stock at an exercise price of \$0.377 per share. The Common Warrants will be exercisable beginning on the six-month anniversary of the date of issuance and expire five and one-half years from their date of issuance. We will receive gross proceeds from exercise of the Common Warrants in such concurrent private placement transaction solely to the extent such Common Warrants are exercised for cash. The Common Warrants and the shares of Common Stock issuable upon the exercise of the Common Warrants are not being offered pursuant to this prospectus supplement and the accompanying prospectus. See "Private Placement Transaction."
Risk factors	Investing in our securities involves a high degree of risk. See "Risk Factors" beginning on page S-6 of this prospectus supplement and under the similar heading in the accompanying prospectus and the other information included or incorporated by reference herein or therein.
Nasdaq Capital Market symbol	"OPGN." There is no established public trading market for the Preferred Shares, the Pre-funded Warrants and the Common Warrants being offered in this offering, and we do not expect a market to develop. In addition, we do not intend to apply for listing the Preferred Shares, the Pre-funded Warrants and the Common Warrants on any national securities exchange or other trading market. Without an active market, the liquidity of the Preferred Shares, the Pre-funded Warrants and the Common Warrants will be limited.

The number of shares of common stock to be outstanding immediately after this offering is based on 46,623,618 shares of our common stock outstanding as of June 30, 2022, and excludes:

- 2,215,755 shares of common stock issuable upon the exercise of outstanding options granted as of June 30, 2022, under our equity incentive plans at a weighted average exercise price of \$4.66 per share;
- 16,217,008 shares of common stock issuable upon the exercise of outstanding warrants issued as of June 30, 2022, at a weighted average exercise price of \$3.98 per share;
- 833,066 shares of common stock issuable upon vesting of outstanding restricted stock units granted as of June 30, 2022;
- 1,284,296 shares of common stock available for future issuance under our equity incentive plans as of June 30, 2022;
- 9,660,000 shares of our Common Stock issuable upon the exercise of the Common Warrants offered in the concurrent private placement with an exercise price of \$0.377 per share; and
- 1,714,882 shares of our Common Stock issued since June 30, 2022 under our current at-the-market offering.

The number of outstanding options, restricted stock units and shares of common stock available for future issuances under our equity incentive plans does not reflect:

- the forfeiture of restricted stock units and/or options to acquire 78,125 shares of our common stock since June 30, 2022.

Unless otherwise indicated, all information contained in this prospectus supplement assumes (i) no exercise of options issued under our equity incentive plans and (ii) no exercise of warrants.

RISK FACTORS

Investing in our securities involves a high degree of risk. In addition to other information contained in this prospectus supplement and in the accompanying prospectus, before investing in our securities, you should carefully consider the risks described under the heading "Risk Factors" in our most recent Annual Report on Form 10-K and Quarterly Report on Form 10-Q and any subsequent Quarterly Reports on Form 10-Q or Current Reports on Form 8-K and in any other documents incorporated by reference into this prospectus, as updated by our future filings. These risks are not the only ones faced by us. Additional risks not known or that are deemed immaterial could also materially and adversely affect our financial condition, results of operations, our products, business and prospects. Any of these risks might cause you to lose all or a part of your investment.

Risks Related to this Offering

We need to raise capital in this offering to support our operations. If we are unable to raise capital in this offering, our financial position will be materially adversely impacted.

We have incurred substantial losses since our inception, and we expect to continue to incur additional losses for the next several years. For the three months ended June 30, 2022, we had a net loss of \$5.8 million. From our inception through June 30, 2022, we had an accumulated deficit of \$248.2 million. We believe that current cash on hand is not sufficient to fund operations beyond the first quarter of 2023. In addition, the report of our independent registered public accounting firm on our financial statements for the years ended December 31, 2021 and 2020 contains explanatory language that substantial doubt exists about our ability to continue as a going concern. In the event we are unable to successfully raise sufficient capital in this offering, we will not have sufficient cash and liquidity to finance our business operations as currently contemplated. Accordingly, in such circumstances we would be compelled to reduce general and administrative expenses and delay research and development projects, including the purchase of scientific equipment and supplies, until we are able to obtain sufficient financing. We have no additional committed sources of capital and may find it difficult to raise money on terms favorable to us or at all. The failure to obtain sufficient capital to support our operations would have a material adverse effect on our business, financial condition and results of operations. If such sufficient financing is not received timely, we would then need to pursue a plan to license or sell assets, seek to be acquired by another entity, cease operations and/or seek bankruptcy protection.

If you purchase securities in this offering, you may experience future dilution as a result of future equity offerings or other equity issuances.

In order to raise additional capital, we believe that we will offer and issue additional shares of our common stock or other securities convertible into or exchangeable for our common stock in the future. We cannot assure you that we will be able to sell shares or other securities in any other offering at a price per share that is equal to or greater than the price per share paid by purchasers in this offering, and investors purchasing other securities in the future could have rights superior to existing stockholders. The price per share at which we sell additional shares of our common stock or other securities convertible into or exchangeable for our common stock in future transactions may be higher or lower than the price per share in this offering.

In addition, we have a significant number of stock options and warrants outstanding. To the extent that outstanding stock options or warrants have been or may be exercised or other shares issued, you may experience further dilution. Further, we may choose to raise additional capital based on market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans.

The Preferred Shares, Pre-funded Warrants and Common Warrants are not listed for trading on any exchange, so the ability to trade the shares of Preferred Shares, Pre-funded Warrants and Common Warrants is limited.

There is no established public trading market for the Preferred Shares, Pre-funded Warrants and Common Warrants being offered in this offering, and we do not expect a market to develop. In addition, we do not intend to apply for listing the Preferred Shares, Pre-funded Warrants or Common Warrants on any national securities exchange or other trading market. Without an active market, the liquidity of the Preferred Shares, Pre-funded Warrants and Common Warrants will be limited.

The market price of our common stock and the trading volume of our common stock has been and may continue to be, highly volatile, and such volatility could cause the market price of our common stock to decrease.

During the first three quarters of 2022, the market price of our Common Stock fluctuated from a high of \$1.11 per share to a low of \$0.286 per share, and our stock price continues to fluctuate. The market price and trading volume of our Common Stock may continue to fluctuate significantly in response to numerous factors, some of which are beyond our control, such as:

- the continued impact of the COVID-19 pandemic on our business and operations;
- our ability to grow our revenue and customer base;
- the announcement of new products or product enhancements by us or our competitors;
- the trading volume of our common stock;
- developments concerning regulatory oversight and approvals;
- variations in our and our competitors' results of operations;
- changes in earnings estimates or recommendations by securities analysts, if our common stock is covered by analysts;
- successes or challenges in our collaborative arrangements or alternative funding sources;
- developments in the health care and life science industries;
- the results of product liability or intellectual property lawsuits;
- adverse effects on our business condition and results of operations from general economic and market conditions and overall fluctuations in the United States and international markets, including deteriorating market conditions due to investor concerns regarding inflation and hostilities between Russia and Ukraine;
- future issuances of common stock or other securities;
- the addition or departure of key personnel;
- announcements by us or our competitors of acquisitions, investments or strategic alliances; and
- general market conditions and other factors, including factors unrelated to our operating performance.

Further, the stock market in general, and the market for health care and life sciences companies in particular, has recently experienced extreme price and volume fluctuations. The volatility of our common stock is further exacerbated due to its low trading volume. Continued market fluctuations could result in extreme volatility in the price of our common stock, which could cause a decline in the value of our common stock and the loss of some or all of your investment.

Management will have broad discretion as to the use of the net proceeds from this offering, and we may not use the proceeds effectively.

Our management will have broad discretion as to the application of the net proceeds and could use them for purposes other than those contemplated at the time of this offering. Our stockholders may not agree with the manner in which our management chooses to allocate and spend the net proceeds. Moreover, our management may use the net proceeds for corporate purposes that may not increase our results of operations or the market value of our common stock. Our failure to apply these funds effectively could have a material adverse effect on our business, delay the development and approval of our products and cause the price of our common stock to decline.

If you purchase common stock sold in this offering, you will experience immediate dilution as a result of this offering.

Because the price per share of our common stock being offered may be higher than the net tangible book value per share of our common stock, you will experience dilution to the extent of the difference between the offering price per share of common stock you pay in this offering and the net tangible book value per share of our common stock immediately after this offering. Our net tangible book value as of June 30, 2022, was approximately \$7.5 million, or \$0.16 per share of common stock. Net tangible book value per share is equal to our total tangible assets minus total liabilities, all divided by the number of shares of common stock outstanding.

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

Sales of a substantial number of shares of our common stock in the public market, or the perception that these sales might occur, could depress the market price of our common stock and could impair our ability to raise capital through the sale of additional equity securities. As of June 30, 2022, we had 46,623,618 shares of common stock outstanding, all of which shares were, and continue to be, eligible for sale in the public market. In addition, all of the shares offered under this prospectus will be freely tradable without restriction or further registration upon issuance.

Trading of our common stock is limited, and trading restrictions imposed on us by applicable regulations may further reduce trading in our common stock, making it difficult for our stockholders to sell their shares; and future sales of common stock could reduce our stock price.

Trading of our common stock is currently conducted on the NASDAQ Capital Market. The liquidity of our common stock is limited, including in terms of the number of shares that can be bought and sold at a given price and reduction in security analysts' and the media's coverage of us, if any. These factors may result in different prices for our common stock than might otherwise be obtained in a more liquid market and could also result in a larger spread between the bid and asked prices for our common stock. In addition, in the absence of a large market capitalization, our common stock is less liquid than the stock of companies with broader public ownership, and, as a result, the trading prices of our common stock may be more volatile. In the absence of an active public trading market, an investor may be unable to liquidate his investment in our common stock. Trading of a relatively small volume of our common stock may have a greater impact on the trading price of our stock than would be the case if our public float were larger. We cannot predict the prices at which our common stock will trade in the future, if at all.

The exercise of outstanding common stock purchase warrants and stock options will have a dilutive effect on the percentage ownership of our capital stock by existing stockholders.

As of June 30, 2022, we had outstanding warrants to acquire 16,217,008 shares of our common stock, and stock options to purchase 2,215,755 shares of our common stock. A significant number of such warrants have exercise prices above our common stock's recent trading prices, but the holders have the right to effect a cashless exercise of such warrants. If a significant number of such warrants and stock options are exercised by the holders, the percentage of our common stock owned by our existing stockholders will be diluted.

We have never paid dividends on our capital stock, and we do not anticipate paying dividends in the foreseeable future.

We have never paid dividends on any of our capital stock and currently intend to retain any future earnings to fund the growth of our business. We may also enter into credit agreements or other borrowing arrangements in the future that will restrict our ability to declare or pay cash dividends on our common stock. Any determination to pay dividends in the future will be at the discretion of our board of directors and will depend on our financial condition, operating results, capital requirements, general business conditions and other factors that our board of directors may deem relevant. As a result, capital appreciation, if any, of our common stock will be the sole source of gain, if any, for the foreseeable future.

We received a bid price deficiency notice from the Nasdaq Capital Market. If we are unable to cure this deficiency and meet the NASDAQ continued listing requirements, we could be delisted from the Nasdaq Capital Market, which would negatively impact the trading of our common stock.

On February 28, 2022, we received notice from Nasdaq that we had failed to maintain a bid price of at least \$1.00 per share for 30 successive trading days. We were originally granted six months to regain compliance with the listing standard. On August 30, 2022, Nasdaq notified us that we had been granted an additional 180-calendar day compliance period, or until February 27, 2023, to regain compliance with the minimum bid price rule. In connection with the grant of such additional compliance period, the Company provided notice to Nasdaq that it intended to cure the bid price deficiency by effecting a reverse stock split, if necessary, prior to the end of the compliance period. While we have until February 27, 2023 to regain such compliance, we do not believe we will be able to do so without implementing a reverse stock split.

Our board of directors authorized the submission of a proposal to effect a reverse stock split of the Company's common stock in order to regain compliance with the minimum bid at the Company's 2022 Annual Meeting of Stockholders. However, such proposal was not approved at such Annual Meeting, and there can be no assurance that we will be able to effect such a proposal in the future. Even if we are able to effect a reverse stock split in the future, there is also no guarantee that we will be able to maintain the Nasdaq Capital Market listing of our common stock in the future.

If our common stock is delisted by Nasdaq, our common stock may be eligible for quotation on an over-the-counter quotation system or on the pink sheets. Upon any such delisting, our common stock would become subject to the regulations of the SEC relating to the market for penny stocks. A penny stock is any equity security not traded on a national securities exchange that has a market price of less than \$5.00 per share. The regulations applicable to penny stocks may severely affect the market liquidity for our common stock and could limit the ability of stockholders to sell securities in the secondary market. In such a case, an investor may find it more difficult to dispose of or obtain accurate quotations as to the market value of our common stock, and there can be no assurance that our common stock will be eligible for trading or quotation on any alternative exchanges or markets.

Delisting from Nasdaq could adversely affect our ability to raise additional financing through public or private sales of equity securities, would significantly affect the ability of investors to trade our securities and would negatively affect the value and liquidity of our common stock. Delisting could also have other negative results, including the potential loss of confidence by employees, the loss of institutional investor interest and fewer business development opportunities.

We may not obtain the required stockholder approval for the Reverse Stock Split, which could result in in our common stock being delisted from Nasdaq.

Our common stock is currently listed on the NASDAQ Capital Market. In order to maintain that listing, we must satisfy minimum bid price requirement for our common stock. On February 28, 2022, we received a notice from Nasdaq notifying us that, based upon the closing bid price of our common stock, for the 30 consecutive business days prior to the notice, the Company no longer met the requirement to maintain a minimum closing bid price of \$1.00 per share, as set forth in Nasdaq Listing Rule 5550(a)(2). The Company was originally granted 180 calendar days, or until August 29, 2022, to regain compliance with the minimum bid price rule. On August 30, 2022, Nasdaq notified the Company that it had been granted an additional 180-calendar day compliance period, or until February 27, 2023, to regain compliance with the Minimum Bid Price Rule. In connection with the grant of such additional compliance period, the Company provided notice to Nasdaq that it intended to cure the bid price deficiency by effecting a reverse stock split, if necessary, prior to the end of the compliance period. While we have until February 27, 2023 to regain such compliance, we do not believe we will be able to do so without implementing a reverse stock split.

If we are not in compliance with the minimum bid price requirement by February 27, 2023, we can appeal Nasdaq's determination to a hearings panel in order to present a plan to regain compliance. If we are not in compliance by February 27, 2023 and are unable to successfully appeal the determination, Nasdaq will provide notice that the Company's shares of common stock will be subject to delisting.

There can be no assurances however that we will be granted any relief or additional time to regain compliance with the minimum bid price requirement and do not believe that any additional grace period will allow the Company to comply with the minimum closing bid price requirement unless a reverse stock split is not approved. The Company expects to call a special meeting of stockholders following this offering in order for stockholders to vote on a proposal to effect a reverse stock split of our outstanding common stock as a measure to regain compliance. There can be no assurances however that we will obtain stockholder approval for a reverse stock split or that the reverse stock split will enable us to comply with the applicable Nasdaq listing standards.

In the event that our common stock is delisted from the NASDAQ, and is not eligible for 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 Sheet or the OTC Bulletin Board. In such event, it could become more difficult to dispose of, or obtain accurate price quotations for, our common stock, and there would likely also be a reduction in our coverage by securities analysts and the news media, which could cause the price of our common stock to decline further. Also, it may be difficult for us to raise additional capital if we are not listed on a major exchange.

The Company's Charter provides that the Court of Chancery of the State of Delaware will be the sole and exclusive forum for substantially all disputes between the Company and its stockholders, which could limit its stockholders' ability to obtain a favorable judicial forum for disputes with the Company or its directors, officers or other employees.

The Company's Charter provides that, unless the Company consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware will be the sole and exclusive forum for (i) any derivative action or proceeding brought on behalf of the Company, (ii) any action asserting a claim of breach of a fiduciary duty owed by any director, officer or other employee of the Company or its stockholders, (iii) any action asserting a claim arising pursuant to any provision of the DGCL or the Company's Certificate of Incorporation or Bylaws, or (iv) any action asserting a claim governed by the internal affairs doctrine. This exclusive forum provision is intended to apply to claims arising under Delaware state law and would not apply to claims brought pursuant to the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, or any other claim for which the federal courts have exclusive jurisdiction. The exclusive forum provision in the Company's Charter will not relieve the Company of its duties to comply with the federal securities laws and the rules and regulations thereunder, and stockholders of the Company will not be deemed to have waived the Company's compliance with these laws, rules and regulations.

This exclusive forum provision may limit a stockholder's ability to bring a claim in a judicial forum of its choosing for disputes with the Company or its directors, officers or other employees, which may discourage lawsuits against the Company and its directors, officers and other employees. In addition, stockholders who do bring a claim in the Court of Chancery of the State of Delaware could face additional litigation costs in pursuing any such claim, particularly if they do not reside in or near Delaware. The Court of Chancery of the State of Delaware may also reach different judgments or results than would other courts, including courts where a stockholder would otherwise choose to bring the action, and such judgments or results may be more favorable to the Company than to its stockholders. However, the enforceability of similar exclusive forum provisions in other companies' certificates of incorporation has been challenged in legal proceedings, and it is possible that a court could find this type of provision to be inapplicable to, or unenforceable in respect of, one or more of the specified types of actions or proceedings. If a court were to find the exclusive forum provision contained in the Company's Charter to be inapplicable or unenforceable in an action, the Company might incur additional costs associated with resolving such action in other jurisdictions.

USE OF PROCEEDS

We estimate that the net proceeds from the sale of the securities offered under this prospectus supplement, and accompanying prospectus, after deducting placement agent's fees and estimated offering expenses payable by us will be approximately \$3.0 million.

We intend to use the net proceeds from the sale of the shares to: (i) support continued commercialization of our FDA-cleared Acuitas AMR Gene Panel test for isolates in the U.S.; (ii) commercialize our products with a focus on the Unyvero platform and diagnostic tests; (iii) support further development and commercialization of the Ares Genetics database; (iv) support directed sales and marketing efforts to the customers and collaborators for our products and services, (v) invest in manufacturing and operations infrastructure to support sales of products; and (vi) repayment of certain outstanding indebtedness of the Company and its subsidiaries. We intend to use the remaining net proceeds for working capital and other general corporate purposes.

This expected use of net proceeds from this offering represents our intentions based upon our current plans and business conditions, which could change in the future as our plans and business conditions evolve. Our management will have broad discretion in the application of the net proceeds from this offering and could use them for purposes other than those contemplated at the time of this offering. Our stockholders may not agree with the manner in which our management chooses to allocate and spend the net proceeds. Moreover, our management may use the net proceeds for corporate purposes that may not result in our being profitable or increase our market value.

DIVIDEND POLICY

We have never declared or paid cash dividends on our common stock. We currently intend to retain our future earnings, if any, for use in our business and therefore do not anticipate paying cash dividends in the foreseeable future. Payment of future dividends, if any, will be at the discretion of our board of directors after taking into account various factors, including our financial condition, operating results, current and anticipated cash needs and plans for expansion.

CAPITALIZATION

The following table sets forth our capitalization as of June 30, 2022:

- on an actual basis;
- on a pro forma basis to give effect to the issuance of the issuance of 1,714,882 shares of our common stock issued in an “at the market” equity offering since June 30, 2022; and
- on an as adjusted basis giving effect to the issuance and sale of 5,360,000 Common Shares in this offering at the offering price of \$0.35 per share and 4,300,000 shares of common stock underlying the Pre-funded Warrants sold in this offering, before deducting placement agent’s compensation and other estimated offering expenses payable by us.

You should read this table together with the information contained in this prospectus supplement and the accompanying prospectus and the information incorporated by reference from our Quarterly Report on Form 10-Q for the quarter ended June 30, 2022 and our Annual Report on Form 10-K for the year ended December 31, 2021, including the historical financial statements and related notes included in each of those reports.

	As of June 30, 2022		
	Actual	Pro Forma	As Adjusted
	(in thousands)		
Cash and cash equivalents	\$ 16,587	\$ 17,616	\$ 19,569
Debt	\$ 14,912	\$ 14,912	\$ 14,912
Stockholders’ equity:			
Common stock, par value \$0.01 per share: 100,000,000 shares authorized, 46,623,618 shares issued and outstanding as of June 30, 2022, actual; and 56,283,618 shares outstanding as adjusted	\$ 466	\$ 483	\$ 563
Preferred stock, par value \$0.01 per share; 10,000,000 shares authorized, no shares outstanding, actual and 33,810 shares outstanding as adjusted	\$ 0.00	\$ 0.00	\$ 0.30
Additional paid-in capital	\$ 276,206	\$ 277,218	\$ 279,091
Accumulated other comprehensive loss	\$ (1,125)	\$ (1,125)	\$ (1,125)
Accumulated deficit	\$ (248,186)	\$ (248,186)	\$ (248,186)
Total stockholders’ equity	\$ 27,361	\$ 28,390	\$ 30,343
Total capitalization	\$ 27,361	\$ 28,390	\$ 30,343

The number of shares of common stock to be outstanding immediately after this offering is based on 46,623,618 shares of our common stock outstanding as of June 30, 2022, and excludes:

- 2,215,755 shares of common stock issuable upon the exercise of outstanding options granted as of June 30, 2022, under our equity incentive plans at a weighted average exercise price of \$4.66 per share;
- 16,217,008 shares of common stock issuable upon the exercise of outstanding warrants issued as of June 30, 2022, at a weighted average exercise price of \$3.98 per share;
- 833,066 shares of common stock issuable upon vesting of outstanding restricted stock units granted as of June 30, 2022;

- 1,284,296 shares of common stock available for future issuance under our equity incentive plans as of June 30, 2022;
- 9,660,000 shares of our Common Stock issuable upon the exercise of the Common Warrants offered in the concurrent private placement with an exercise price of \$0.377 per share; and
- 1,714,882 shares of our Common Stock issued since June 30, 2022 under our current at-the-market offering.

The number of outstanding options, restricted stock units and shares of common stock available for future issuances under our equity incentive plans does not reflect:

- the forfeiture of restricted stock units and/or options to acquire 78,125 shares of our common stock since June 30, 2022.

Unless otherwise indicated, all information contained in this prospectus supplement assumes (i) no exercise of options issued under our equity incentive plans and (ii) no exercise of warrants.

DILUTION

If you purchase shares in this offering, your ownership interest will be diluted to the extent of the difference between the public offering price per security you will pay in this offering and the as adjusted net tangible book value per share of our common stock after giving effect to this offering. Net tangible book value per share is determined by dividing the number of outstanding shares of our common stock into our net tangible book value, which consists of total tangible assets (total assets less intangible assets) less total liabilities. As of June 30, 2022, we had a historical net tangible book value of \$7.5 million, or approximately \$0.16 per share.

Also, at June 30, 2022, on pro forma basis taking into account the issuance of 1,714,882 shares of our common stock issued in an “at the market” equity offering since June 30, 2022, we had a pro forma net tangible book value of approximately \$8.5 million corresponding to a pro forma net tangible book value of \$0.18 per share.

Purchasers participating in this offering will incur immediate, substantial dilution. After giving effect to the sale of securities in this offering at the public offering price of \$0.35 per share, and after deducting estimated offering expenses payable by us, our pro forma as adjusted net tangible book value per share of our common stock at June 30, 2022 would have been approximately \$10.5 million, or \$0.19 per share. This represents an immediate increase in our pro forma net tangible book value per share of our common stock of approximately \$0.01 per share to existing stockholders and an immediate dilution of approximately \$0.16 per share to purchasers in this offering. The following table illustrates this per share dilution on a pro forma as adjusted basis:

Assumed offering price per share of common stock		\$	0.35
Pro forma net tangible book value per share of as June 30, 2022	\$	0.18	
Increase in pro forma net tangible book value per share attributable to this offering	\$	<u>0.01</u>	
Pro forma as adjusted net tangible book value per share as of June 30, 2022, after giving effect to this offering		\$	0.19
Dilution per share to investors in this offering		\$	<u>0.16</u>

The number of shares of common stock to be outstanding immediately after this offering is based on 46,623,618 shares of our common stock outstanding as of June 30, 2022, and excludes:

- 2,215,755 shares of common stock issuable upon the exercise of outstanding options granted as of June 30, 2022, under our equity incentive plans at a weighted average exercise price of \$4.66 per share;
- 16,217,008 shares of common stock issuable upon the exercise of outstanding warrants issued as of June 30, 2022, at a weighted average exercise price of \$3.98 per share;
- 833,066 shares of common stock issuable upon vesting of outstanding restricted stock units granted as of June 30, 2022;
- 1,284,296 shares of common stock available for future issuance under our equity incentive plans as of June 30, 2022;
- 9,660,000 shares of our Common Stock issuable upon the exercise of the Common Warrants offered in the concurrent private placement with an exercise price of \$0.377 per share; and
- 1,714,882 shares of our Common Stock issued since June 30, 2022 under our current at-the-market offering.

The number of outstanding options, restricted stock units and shares of common stock available for future issuances under our equity incentive plans does not reflect:

- the forfeiture of restricted stock units and/or options to acquire 78,125 shares of our common stock since June 30, 2022.

Unless otherwise indicated, all information contained in this prospectus supplement assumes (i) no exercise of options issued under our equity incentive plans and (ii) no exercise of warrants.

DESCRIPTION OF SECURITIES

Series C Mirroring Preferred Stock

The Company is offering up to 33,810 shares of its Series C Mirroring Preferred Stock in this offering, with a stated value of \$0.01 per share. The following are the principal terms of the Preferred Shares:

Dividends

The holders of Preferred Shares will not be entitled to dividends.

Voting Rights

The Preferred Shares has no voting rights, except:

- the right to vote, with the holders of common stock, as a single class, with each share of Preferred Shares entitled to 100,000 votes per share, on any resolution presented to stockholders for the purpose of obtaining approval of the Reverse Stock Split, provided that, pursuant to the Securities Purchase Agreement, the holders of Preferred Shares agreed that such votes must be cast in the same proportion as the aggregate shares of common stock are voted on such resolution (excluding any shares of common stock that are not voted); and
- otherwise, as long as any shares of Preferred Shares are outstanding, the holders of the Preferred Shares will be entitled to approve, by a majority vote of the then outstanding shares of Preferred Shares if the Company seeks to (a) alter or change adversely the powers, preferences or rights given to the Preferred Shares or alter or amend the Certificate of Designation governing the Preferred Shares, (b) amend its Certificate or other charter documents in any manner that adversely affects any rights of the holders of the Preferred Shares, (c) increase the number of authorized shares of Preferred Shares, or (d) enter into any agreement with respect to any of the foregoing.

Liquidation

Upon any liquidation, dissolution or winding-up of the Company, whether voluntary or involuntary, or a Liquidation, the then holders of the Preferred Shares shall be entitled to receive out of the assets, whether capital or surplus, of the Company an amount equal to \$0.01 per Preferred Share, or the stated value of such shares, which amount shall be paid to such holders prior to any distribution or payment made to holders of shares of common stock.

No Conversion

The Preferred Shares are not convertible into common stock or other securities of the Company.

Termination

Upon the effectiveness of the Reverse Stock Split, the Preferred Shares will automatically terminate and cease to be outstanding shares of preferred stock of the Company.

Pre-funded Warrants

In connection with the sale of our Common Shares in this offering, the Company is also offering 4,300,000 shares of common stock underlying Pre-funded Warrants.

Duration and Exercise Price

Each Pre-funded Warrant offered hereby has an initial exercise price per share equal to \$0.01. The Pre-funded Warrants will be immediately exercisable and may be exercised at any time until the Pre-funded Warrants are exercised in full. The exercise price and number of shares of common stock issuable upon exercise is subject to appropriate adjustment in the event of stock dividends, stock splits, reorganizations or similar events affecting our common stock and the exercise price. The Pre-funded Warrants will be issued separately from the accompanying Common Warrants, and may be transferred separately immediately thereafter.

Exercisability

The Pre-funded 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 (except in the case of a cashless exercise as discussed below). A holder (together with its affiliates) may not exercise any portion of the Pre-funded Warrant to the extent that the holder would own more than 4.99% of the outstanding common stock immediately after exercise, except that upon at least 61 days' prior notice from the holder to us, the holder may increase the amount of ownership of outstanding stock after exercising the holder's Pre-funded Warrants 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 Pre-funded Warrants. Purchasers of Pre-funded Warrants in this offering may also elect prior to the issuance of the Pre-funded Warrants to have the initial exercise limitation set at 9.99% of our outstanding common stock.

Cashless Exercise

The holders of Pre-funded Warrants may also elect to exercise such Pre-funded Warrants in a cashless exercise without making the cash payment otherwise contemplated to be made to us upon exercise of such Pre-funded Warrant, in which event, the holders would instead receive upon such exercise (either in whole or in part) the net number of shares of common stock determined according to a formula set forth in the pre-funded warrants.

Transferability

Subject to applicable laws, a Pre-funded Warrant may be transferred at the option of the holder upon surrender of the Pre-funded Warrant to us together with the appropriate instruments of transfer.

Fractional Shares

No fractional shares of common stock will be issued upon the exercise of the Pre-funded Warrants. Rather, the number of shares of common stock to be issued will, at our election, either be rounded up to the nearest whole number or we will pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the exercise price.

Trading Market

There is no trading market available for the Pre-funded Warrants on any securities exchange or nationally recognized trading system.

Right as a Stockholder

Except as otherwise provided in the Pre-funded Warrants or by virtue of such holder's ownership of shares of our common stock, the holders of the Pre-funded Warrants do not have the rights or privileges of holders of our common stock, including any voting rights, until they exercise their Pre-funded Warrants.

PRIVATE PLACEMENT TRANSACTION

In a concurrent private placement, we plan to issue and sell to same institutional investor the Common Warrants to purchase up to an aggregate of 9,660,000 shares of Common Stock at an exercise price equal to \$0.377 per share. The Common Warrants and the shares of Common Stock issuable upon the exercise of such warrants are not being registered under the Securities Act, are not being offered pursuant to this prospectus supplement and the accompanying prospectus and are being offered pursuant to the exemption provided in Section 4(a)(2) under the Securities Act and Rule 506(b) promulgated thereunder. Accordingly, investors may only sell shares of Common Stock issued upon exercise of the Common Warrants pursuant to an effective registration statement under the Securities Act covering the resale of those shares, an exemption under Rule 144 under the Securities Act or another applicable exemption under the Securities Act.

Common Warrants

The Company is also offering Common Warrants to purchase an aggregate of 9,660,000 shares of our Common Stock.

Each Common Warrant issued in this offering represents the right to purchase up to one share of Common Stock at an initial exercise price of \$0.35 per share. Each Common Warrant may be exercised, in cash or by a cashless exercise at the election of the holder at any time following the six month anniversary of the date of issuance and from time to time thereafter through and including the fifth anniversary of the initial exercise date.

The Common Warrants will be exercisable in whole or in part by delivering to the Company a completed instruction form for exercise and complying with the requirements for exercise set forth in the Common Warrant. Payment of the exercise price may be made in cash or pursuant to a cashless exercise, in which case the holder would receive upon such exercise the net number of shares of Common Stock determined according to the formula set forth in the Common Warrant.

No Fractional Shares

No fractional shares or scrip representing fractional shares shall be issued upon the exercise of the Common Warrant. As to any fraction of a share which the holder would otherwise be entitled to purchase upon such exercise, the number of shares of common stock to be issued shall be rounded up to the nearest whole number.

Failure to Timely Deliver Shares

If we fail to deliver to the holder a certificate representing shares issuable upon exercise of a Common Warrant or to credit the holder's balance account with Depository Trust Company for such number of shares of common stock to which the holder is entitled upon the holder's exercise of the Common Warrant, in each case, by the delivery date set forth in the Common Warrant, and if after such date the holder is required by its broker to purchase (in an open market transaction or otherwise) or the holder's brokerage firm otherwise purchases, shares of common stock to deliver in satisfaction of a sale by the holder of the warrant shares which the holder anticipated receiving upon such exercise, or a Buy-In, then we shall (A) pay in cash to the holder the amount, if any, by which (x) the holder's total purchase price (including brokerage commissions, if any) for the shares of common stock so purchased exceeds (y) the amount obtained by multiplying (1) the number of warrant shares that we were required to deliver to the holder in connection with the exercise at issue, times (2) the price at which the sell order giving rise to such purchase obligation was executed, and (B) at the option of the holder, either reinstate the portion of the applicable warrant and equivalent number of warrant shares for which such exercise was not honored (in which case such exercise shall be deemed rescinded) or deliver to the holder the number of shares of common stock that would have been issued had we timely complied with our exercise and delivery obligations. In addition, if we fail to deliver to the holder any common stock pursuant to a validly-exercised Common Warrant, we will be required to pay liquidated damages in the amount of \$10 per trading day for each \$1,000 of the shares of common stock exercised but not delivered (and rising to \$20 per trading day beginning the third trading day after the warrant share delivery date) until such time the shares of common stock are delivered or the holder rescinds such exercise.

Exercise Limitation

In general, a holder will not have the right to exercise any portion of a Common Warrant if the holder (together with its Attribution Parties (as defined in the Common Warrant)) would beneficially own in excess of 4.99% or 9.99%, at the election of the holder, 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 warrant. However, any holder may increase or decrease such percentage to any other percentage not in excess of 9.99% upon notice to us, provided that any increase in this limitation will not be effective until 61 days after such notice from the holder to us and such increase or decrease will apply only to the holder providing such notice.

Adjustment for Stock Splits

The exercise price and the number of shares of common stock purchasable upon the exercise of the Common Warrants are subject to adjustment upon the occurrence of specific events, including sales of additional shares of Common Stock, stock dividends, stock splits, and combinations of our common stock.

Dividends or Distributions

If we declare or make any dividend or other distribution of its assets (or rights to acquire its assets) to holders of shares of our common stock, by way of return of capital or otherwise (including, without limitation, any distribution of cash, stock or other securities, property, options, evidence of indebtedness or any other assets by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) at any time after the issuance of the Common Warrants, then, in each such case, the holders of the Common Warrants shall be entitled to participate in such distribution to the same extent that the holders would have participated therein if the holders had held the number of shares of common stock acquirable upon complete exercise of the Common Warrants.

Purchase Rights

If we grant, issue or sell any shares of our common stock or securities exercisable for, exchangeable for or convertible into our common stock, or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of shares of our common stock, referred to as Purchase Rights, then each holder of the Common Warrants will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the holder could have acquired if the holder had held the number of shares of common stock acquirable upon complete exercise of the Common Warrant immediately before the record date, or, if no such record is taken, the date as of which the record holders of shares of common stock are to be determined, for the grant, issue or sale of such Purchase Rights.

Fundamental Transaction

If a Fundamental Transaction (as defined in the Common Warrants and described below) occurs, then the successor entity will succeed to, and be substituted for us, and may exercise every right and power that we may exercise and will assume all of our obligations under the Common Warrants with the same effect as if such successor entity had been named in the warrant itself. Additionally, upon consummation of a Fundamental Transaction pursuant to which holders of shares of our common stock are entitled to receive securities or other assets with respect to or in exchange for shares of our common stock, we will make appropriate provision to ensure that the holder will thereafter have the right to receive upon an exercise of the Common Warrants at any time after the consummation of the Fundamental Transaction but prior to the applicable expiration date of the Common Warrants, in lieu of shares of our Common Stock (or other securities, cash, assets or other property) purchasable upon the exercise of the Common Warrant prior to such Fundamental Transaction, at the option of each holder (without regard to any limitation in the Common Warrant on the exercise of the Common Warrants), the number of shares of common stock of the successor or acquiring corporation or of us, if we are the surviving corporation, and any additional consideration which the holder would have been entitled to receive upon the happening of such Fundamental Transaction had the Common Warrant been exercised immediately prior to such Fundamental Transaction.

If holders of our common stock are given a choice as to the securities, cash or property to be received in a Fundamental Transaction, then the holder shall be given the same choice as to the consideration it receives upon any exercise of the Common Warrants, following such Fundamental Transaction. These provisions apply similarly and equally to successive Fundamental Transactions and other corporate events described in the Common Warrants and will be applied without regard to any limitations on the exercise of the warrant.

In the event of a Fundamental Transaction, at the request of the holder, we or the successor entity shall purchase the unexercised portion of the Common Warrants from the holder by paying to the holder, on or prior to the second trading day after such request (or, if later, on the effective date of the Fundamental Transaction), cash in an amount equal to the Black-Scholes Value (as defined below) of the remaining unexercised portion of the Common Warrants on the date of such Fundamental Transaction.

Transferability

Subject to applicable laws, the Common Warrants may be offered for sale, sold, transferred or assigned. There is currently no trading market for the Common Warrants and a trading market is not expected to develop.

Rights as a Stockholder

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

Amendments

Each Common Warrant may be amended with the written consent of the holder of such Common Warrant and us.

Listing

There is no established public trading market for the Common Warrants, and we do not expect a market to develop. In addition, we do not intend to apply for listing of the Common Warrants on any national securities exchange.

Definitions

“**Black Scholes Value**” means the value of the Common Warrants based on the Black-Scholes Option Pricing Model obtained from the “OV” function on Bloomberg, L.P. (“**Bloomberg**”) determined as of the day of consummation of the applicable Fundamental Transaction for pricing purposes and reflecting (A) a risk-free interest rate corresponding to the U.S. Treasury rate for a period equal to the time between the date of the public announcement of the applicable Fundamental Transaction and the Termination Date, (B) an expected volatility equal to the greater of 100% and the 100 day volatility obtained from the HVT function on Bloomberg (determined utilizing a 365 day annualization factor) as of the trading day immediately following the public announcement of the applicable Fundamental Transaction, (C) the underlying price per share used in such calculation shall be the greater of (i) the sum of the price per share being offered in cash, if any, plus the value of any non-cash consideration, if any, being offered in such Fundamental Transaction and (ii) the greater of (x) the last VWAP immediately prior to the public announcement of such Fundamental Transaction and (y) the last VWAP immediately prior to the consummation of such Fundamental Transaction and (D) a remaining option time equal to the time between the date of the public announcement of the applicable Fundamental Transaction and the Termination Date, and (E) a zero cost of borrow.

“**Fundamental Transaction**” means (i) we, directly or indirectly, in one or more related transactions effect any merger or consolidation with or into another Person, (ii) we (and all of our subsidiaries, taken as a whole), directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of our assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (whether by us or another Person) is completed pursuant to which holders of common stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of the outstanding common stock, (iv) we, directly or indirectly, in one or more related transactions effect any reclassification, reorganization or recapitalization of our common stock or any compulsory share exchange pursuant to which our common stock is effectively converted into or exchanged for other securities, cash or property, or (v) we, directly or indirectly, in one or more related transactions consummate a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off, merger or scheme of arrangement) with another Person or group of Persons whereby such other Person or group acquires more than 50% of the outstanding shares of our common stock (not including any shares of common stock held by the other Person or other Persons making or party to, or associated or affiliated with the other Persons making or party to, such stock or share purchase agreement or other business combination).

PLAN OF DISTRIBUTION

We engaged H.C. Wainwright & Co., LLC, or the placement agent, to act as our exclusive placement agent to solicit offers to purchase the shares of our Common Shares, Preferred Shares, Pre-funded Warrants and Common Warrants offered by this prospectus supplement and the accompanying prospectus. The placement agent is not purchasing or selling any such securities, nor is it required to arrange for the purchase and sale of any specific number or dollar amount of such securities, other than to use its "reasonable best efforts" to arrange for the sale of such securities by us. Therefore, we may not sell all of the Common Shares, Preferred Shares, Pre-funded Warrants and Common Warrants being offered. The terms of this offering were subject to market conditions and negotiations between us, the placement agent and prospective investors. The placement agent will have no authority to bind us by virtue of the engagement letter. We have entered into a securities purchase agreement directly with an institutional investor who has agreed to purchase the Common Shares, Preferred Shares, Pre-funded Warrants and Common Warrants in this offering. We will only sell to investors who have entered into securities purchase agreements. The placement agent may retain sub-agents and selected dealers in connection with this offering.

Delivery of the shares of Common Shares, Preferred Shares, Pre-funded Warrants and Common Warrants offered hereby is expected to occur on or about October 3, 2022, subject to satisfaction of certain customary closing conditions.

We have agreed to pay the placement agent an aggregate fee equal to 6.0% of the gross proceeds received in the offering. In addition, we have agreed to reimburse the placement agent for its legal fees and expenses and other out-of-pocket expenses in an amount up to \$80,000 and clearing expenses of \$15,950.

We estimate the total expenses of this offering paid or payable by us, exclusive of the placement agent's cash fee of 6.0% of the gross proceeds and expenses, will be approximately \$100,000. After deducting the fees due to the placement agent and our estimated expenses in connection with this offering, we expect the net proceeds from this offering will be approximately \$3.0 million.

The following table shows the per share and total cash fees we will pay to the placement agent in connection with the sale of the Common Shares, Preferred Shares, and shares of common stock underlying the Pre-funded Warrants pursuant to this prospectus supplement and the accompanying prospectus.

	Per Common Share	Per Preferred Share	Per Share Underlying Pre-funded Warrant	Total
Offering price	\$ 0.35	\$ 0.01	\$ 0.34	\$ 3,381,338.10
Placement agent fees	\$ 0.021	\$ 0.0006	\$ 0.021	\$ 202,880.29
Proceeds before expenses to us	\$ 0.329	\$ 0.0094	\$ 0.319	\$ 3,178,457.81

Indemnification

We have agreed to indemnify the placement agent against certain liabilities, including liabilities under the Securities Act and liabilities arising from breaches of representations and warranties contained in our engagement letter with the placement agent. We have also agreed to contribute to payments the placement agent may be required to make in respect of such liabilities.

Other Relationships

From time to time, the placement agent may provide in the future various advisory, investment and commercial banking and other services to us in the ordinary course of business, for which they have received and may continue to receive customary fees and commissions. However, except as disclosed in this prospectus supplement, we have no present arrangements with the placement agent for any further services. Wainwright is currently acting as sales agent under our existing At the Market, or ATM, Offering, which commenced in June 2022, for which it receives compensation.

Regulation M Compliance

The placement agent may be deemed to be an underwriter within the meaning of Section 2(a)(11) of the Securities Act, and any commissions received by it and any profit realized on the sale of our Shares of Preferred Stock offered hereby by it while acting as principal might be deemed to be underwriting discounts or commissions under the Securities Act. The placement agent will be required to comply with the requirements of the Securities Act and the Exchange Act, including, without limitation, Rule 10b-5 and Regulation M under the Exchange Act. These rules and regulations may limit the timing of purchases and sales of our securities by the placement agent. Under these rules and regulations, the placement agent may not (i) engage in any stabilization activity in connection with our securities; and (ii) bid for or purchase any of our securities or attempt to induce any person to purchase any of our securities, other than as permitted under the Exchange Act, until they have completed their participation in the distribution.

Trading Market

Our common stock is listed on the Nasdaq Capital Market under the symbol “OPGN.” Our preferred stock is not listed for trading on any market.

LEGAL MATTERS

The validity of the securities being offered hereby will be passed upon by Ballard Spahr LLP, Philadelphia, Pennsylvania. Certain legal matters will be passed upon for the placement agent by Ellenoff Grossman & Schole LLP, New York, New York.

EXPERTS

The consolidated financial statements of OpGen, Inc. and its subsidiaries as of December 31, 2021 and 2020, and for the years then ended, have been incorporated by reference herein in reliance upon the report, also incorporated by reference herein, of CohnReznick LLP, an independent registered public accounting firm, and upon the authority of said firm as experts in accounting and auditing. The audit report covering the December 31, 2021 consolidated financial statements contains an explanatory paragraph that states that the Company has experienced losses and negative cash flows from operations since its inception, has an accumulated deficit, and has debt obligations which raise substantial doubt about its ability to continue as a going concern. The consolidated financial statements do not include any adjustments that might result from the outcome of that uncertainty.

WHERE YOU CAN FIND MORE INFORMATION

This prospectus supplement constitutes a part of the registration statement on Form S-3 that we have filed with the SEC under the Securities Act. As permitted by the SEC's rules, this prospectus supplement and any accompanying prospectus, which forms a part of the registration statement, do not contain all of the information that is included in the registration statement. You will find additional information about us in the registration statement. Any statement made in this prospectus supplement or any accompanying prospectus concerning legal documents are not necessarily complete and you should read the documents that are filed as exhibits to the registration statement or otherwise filed with the SEC for a more complete understanding of the document or matter. For further information with respect to us and our Common Stock, we refer you to the registration statement and the exhibits and schedule that were filed with the registration statement. Statements contained in this prospectus supplement about the contents of any contract or any other document that is filed as an exhibit to the registration statement are not necessarily complete, and we refer you to the full text of the contract or other document filed as an exhibit to the registration statement. The SEC maintains a website that contains reports, proxy and information statements, and other information regarding registrants that file electronically with the SEC. The address of the website is www.sec.gov.

We file periodic reports under the Securities Exchange Act of 1934, including annual, quarterly and special reports, and other information with the Securities and Exchange Commission. These periodic reports and other information are available on the website of the SEC referred to above.

We make available free of charge on or through our internet website 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 as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. The information found on our website, www.opgen.com, other than as specifically incorporated by reference in this prospectus supplement, is not part of this prospectus supplement.

INCORPORATION BY REFERENCE

The SEC allows us to "incorporate by reference" in this prospectus the information in other documents that we file with it, which means that we can disclose important information to you by referring you to those documents containing such information. This prospectus supplement is part of a registration statement we filed with the SEC. You should rely on the information incorporated by reference in this prospectus supplement, the accompanying prospectus and the registration statement. The information incorporated by reference is considered to be part of this prospectus supplement and information we file later with the SEC will automatically update and supersede this information and information contained in documents filed earlier with the SEC. We incorporate by reference the documents listed below, any filings made with the SEC after the date of the initial registration statement and prior to effectiveness of the registration statement, and any future filings made with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act prior to the termination of the offering; provided, that we are not incorporating by reference any documents or information deemed to have been furnished and not filed in accordance with SEC rules. The documents we are incorporating by reference are:

- our [Annual Report on Form 10-K for the year ended December 31, 2021](#), filed with the SEC on March 30, 2022;
- our Quarterly Reports on Form 10-Q for the quarters ended [March 31, 2022](#), filed with the SEC on May 13, 2022, and [June 30, 2022](#), filed with the SEC on August 12, 2022;
- our Current Reports on Form 8-K, filed with the Commission on [March 3, 2022](#) (Item 3.01), [April 25, 2022](#) (Items 8.01 and 9.01), [May 24, 2022](#) (Items 1.01, 2.03 and 9.01), [June 9, 2022](#) (Item 5.07), [June 24, 2022](#) (Items 1.01, 1.02 and 9.01), [August 31, 2022](#) (Items 3.01, 8.01 and 9.01), and [September 20, 2022](#) (Item 8.01 and 9.01);
- our [Definitive Proxy Statement](#) for the Company's 2022 Annual Meeting of Stockholders filed with the Commission on April 25, 2022; and
- the description of our common stock contained in the Registration Statement on [Form 8-A](#) filed on April 30, 2015 and any amendments to such Registration Statement filed subsequently thereto, including all amendments or reports filed for the purpose of updating such description.

We will furnish to you, on written or oral request, a copy of any or all of the documents that have been incorporated by reference, including exhibits to these documents. You may request a copy of these filings at no cost by writing or telephoning our Secretary at the following address and telephone number:

OpGen, Inc.
9717 Key West Avenue, Suite 100
Rockville, MD 20850
Attention: Albert Weber, Corporate Secretary
Telephone No.: (301) 869-9683



**Common Stock
Preferred Stock
Warrants
Units**

We may offer and sell from time to time, in one or more offerings, up to \$150,000,000 of any combination of securities described in this prospectus, in one or more classes or series and in amounts, at prices and on terms that we will determine at the time of the offerings.

This prospectus describes the general manner in which our securities may be offered using this prospectus. Each time we sell securities pursuant to this prospectus, we will provide the specific terms of the securities offered in a supplement to this prospectus. The prospectus supplements will also describe the specific manner in which we will offer securities and may also supplement, update or amend information contained in this prospectus. You should read this prospectus and any related prospectus supplement carefully before you invest in our securities.

The securities being registered for the account of the company may be sold on a delayed or continuous basis directly by us, through dealers, agents or underwriters designated from time to time, or through any combination of these methods. The prospectus supplements to this prospectus will provide the specific terms of the plan of distribution. If any dealers, agents or underwriters are involved in the sale of securities in respect of which this prospectus is being delivered, we will disclose their names and the nature of our arrangements with them in any prospectus supplement.

Our common stock is traded on the NASDAQ Capital Market under the symbol "OPGN." On August 9, 2021, the closing price of our common stock was \$[] per share.

Investing in our securities involves a high degree of risk. See "Risk Factors" beginning on page [] of this prospectus and any similar heading in any prospectus supplement or other documents that are incorporated by reference into this prospectus.

This prospectus may not be used to offer or sell securities unless accompanied by a prospectus supplement for the securities being sold.

Neither the Securities and Exchange Commission nor any other regulatory body has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this Prospectus is August 19, 2021.

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ABOUT THIS PROSPECTUS

This prospectus is part of a “shelf” registration statement that we filed with the U.S. Securities and Exchange Commission, or SEC. By using a shelf registration statement, we may, from time to time, issue any combination of the securities described in this prospectus in one or more offerings up to an aggregate maximum offering price of \$150,000,000. This prospectus sets forth the certain terms of the securities that we may offer. Each time we sell any of our securities described in this prospectus, we will provide a prospectus supplement that will contain more specific information about the offering and the terms of the securities being sold. We may also add, update or change in the prospectus supplement any of the information contained in this prospectus or the documents incorporated by reference.

This prospectus provides you with a general description of the company and our common stock. For further information about our business and our securities, you should refer to the registration statement and the reports incorporated by reference in this prospectus, as described in “Where You Can Find Additional Information.”

You should rely only on the information contained in this prospectus and in any prospectus supplement (including in any documents incorporated by reference herein or therein). We have not authorized anyone to provide you with any different information. If anyone provides you with different or inconsistent information, you should not rely on it.

This prospectus is not an offer to sell securities in any state where the offer or solicitation is not permitted. We are offering to sell our common stock, and seeking offers to buy, only in jurisdictions where offers and sales are permitted.

You should assume that the information in this prospectus or any prospectus supplement is accurate only as of the date of this prospectus or any prospectus supplement and that any information we have incorporated herein by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus, any prospectus supplement or any sale of any security.

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

This prospectus may not be used to consummate sales of our securities, unless it is accompanied by a prospectus supplement. To the extent there are inconsistencies between any prospectus supplement, this prospectus and any documents incorporated by reference, the document with the most recent date will control.

We and our subsidiaries own various U.S. federal trademark registrations and applications and unregistered trademarks and servicemarks, including OpGen®, Acuitas®, Acuitas Lighthouse®, AdvanDx®, Curetis®, Unyvero®, ARES® and ARES GENETICS®. All other trademarks, servicemarks or trade names referred to in this prospectus are the property of their respective owners. Solely for convenience, the trademarks and trade names in this prospectus are sometimes referred to without the ® and ™ symbols, but such references should not be construed as any indicator that their respective owners will not assert, to the fullest extent under applicable law, their rights thereto. We do not intend the use or display of other companies’ trademarks and trade names to imply a relationship with, or endorsement or sponsorship of us by, any other companies, products or services.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended (the “Securities Act”), and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”). All statements, other than statements of historical fact, included or incorporated in this prospectus regarding our strategy, future operations, collaborations, intellectual property, cash resources, financial position, future revenues, projected costs, prospects, plans, and objectives of management are forward-looking statements. The words “believes,” “anticipates,” “estimates,” “plans,” “expects,” “intends,” “may,” “could,” “should,” “potential,” “likely,” “projects,” “continue,” “will,” and “would” and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words.

We have based these forward-looking statements on our current expectations and projections about future events and trends that we believe may affect our financial condition, results of operations, strategy, short- and long-term business operations and objectives, and financial needs. These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those described under the heading “Risk Factors.” In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances included herein may not occur, and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements. Given these uncertainties, you should not place undue reliance on these forward-looking statements. Forward-looking statements include, but are not limited to, statements about:

- our ability to integrate the OpGen, Curetis, and Ares Genetics businesses;
- receipt of regulatory clearance of our submitted 510(k) pre-market submission for our Acuitas AMR Gene Panel test for use with bacterial isolates;
- the impact of the COVID-19 pandemic on our business and operations;
- our use of proceeds from capital financing transactions;
- the completion of our development efforts for the Unyvero UTI and IJI panels, Unyvero A30 *RQ* platform, Aresdb and Acuitas Lighthouse Software, and the timing of regulatory submissions;
- our ability to sustain or grow our customer base for our current research use only testing products;
- regulations and changes in laws or regulations applicable to our business, including regulation by the FDA;
- our liquidity and working capital requirements, including our cash requirements over the next 12 months;
- anticipated trends and challenges in our business and the competition that we face;
- the execution of our business plan and our growth strategy;
- our expectations regarding the size of and growth in potential markets;
- our opportunity to successfully enter into new collaborative or strategic agreements;
- our ability to maintain compliance with the ongoing listing requirements for the Nasdaq Capital Market;
- compliance with the U.S. and international regulations applicable to our business; and
- our expectations regarding future revenue and expenses.

Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, level of activity, performance or achievements. In addition, neither we nor any other person assumes responsibility for the accuracy and completeness of any of these forward-looking statements. These risks should not be construed as exhaustive and should be read in conjunction with our other disclosures, including but not limited to the risks described under the heading “Risk Factors.” Other risks may be described from time to time in our filings made under the securities laws. New risks emerge from time to time. It is not possible for our management to predict all risks. All forward-looking statements in this prospectus speak only as of the date made and are based on our current beliefs and expectations. We undertake no obligation to update or revise any forward-looking statement, whether as a result of new information, future events or otherwise.

PROSPECTUS SUMMARY

This summary highlights information contained in greater detail elsewhere in this prospectus. This summary is not complete and does not contain all of the information you should consider in making your investment decision. You should read the entire prospectus carefully before making an investment in our securities. You should carefully consider, among other things, our financial statements and the related notes and the sections entitled “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” included elsewhere in, or incorporated by reference into, this prospectus. When we refer to OpGen, Inc., and its subsidiaries, we use the terms “OpGen,” “the Company,” “us,” “we” and “our.”

OpGen Overview

We are a precision medicine company harnessing the power of molecular diagnostics and informatics to help combat infectious disease. Along with subsidiaries, Curetis GmbH and Ares Genetics GmbH, we are developing and commercializing molecular microbiology solutions helping to guide clinicians with more rapid and actionable information about life threatening infections to improve patient outcomes, and decrease the spread of infections caused by multidrug-resistant microorganisms, or MDROs. Our current product portfolio includes Unyvero, Acuitas AMR Gene Panel, Acuitas® Lighthouse, and the ARES Technology Platform including ARESdb, using NGS technology and AI-powered bioinformatics solutions for antibiotic response prediction.

Our focus is on our combined broad portfolio of products, which include high impact rapid diagnostics and bioinformatics to interpret AMR genetic data. We currently expect to focus on the following products for lower respiratory infection, urinary tract infection and invasive joint infection:

- The Unyvero Lower Respiratory Tract, or LRT, test is the first U.S. Food and Drug Administration, or FDA, cleared test that can be used for the detection of more than 90% of common causative agents of hospitalized pneumonia. According to the National Center for Health Statistics (2018), pneumonia is a leading cause of admissions to the hospital and is associated with substantial morbidity and mortality. The Unyvero LRT automated test detects 19 pathogens within less than five hours, with approximately two minutes of hands-on time and provides clinicians with a comprehensive overview of 10 genetic antibiotic resistance markers. We are also commercializing the Unyvero LRT BAL test for testing bronchoalveolar lavage, or BAL, specimens from patients with lower respiratory tract infections following FDA clearance received by Curetis in December 2019. The Unyvero LRT BAL automated test simultaneously detects 20 pathogens and 10 antibiotic resistance markers, and it is the first and only FDA-cleared panel that also includes *Pneumocystis jirovecii*, a key fungal pathogen often found in immunocompromised patients that can be difficult to diagnose, as the 20th pathogen on the panel. We believe the Unyvero LRT and LRT BAL tests have the ability to help address a significant, previously unmet medical need that causes over \$10 billion in annual costs for the U.S. healthcare system, according to the Centers for Disease Control, or CDC.
- The Unyvero Urinary Tract Infection, or UTI, test which is CE-IVD marked in Europe is currently being made available to laboratories in the U.S. as a research use only or RUO kit. The test detects a broad range of pathogens as well as antimicrobial resistance markers directly from native urine specimens. As part of our portfolio strategy update on October 13, 2020, we have decided to proceed with the analytical and clinical performance evaluation including clinical trials required for a subsequent U.S. FDA submission.
- The Unyvero Invasive Joint Infection, or IJI, test, which is a variant developed for the U.S. market based on the CE-IVD-marked European Unyvero ITI test, has also been selected for analytical and clinical performance evaluation including clinical trials towards a future U.S. FDA submission. Microbial diagnosis of IJI is difficult because of challenges in sample collection, usually at surgery, and patients being on prior antibiotic therapy which minimizes the chances of recovering viable bacteria. We believe that Unyvero IJI could be useful in identifying pathogens as well as their AMR markers to help guide optimal antibiotic treatment for these patients.
- The Acuitas AMR Gene Panel (Isolates) is currently pending final FDA review and a potential clearance decision. The FDA recently notified us that completion of the FDA’s review would require additional time due to the COVID-19 pandemic and ongoing public health crisis. The FDA also informed us that it currently expects to complete its review by the end of August 2021 but explained it still does not commit to any MDUFA timelines and that its timelines can be affected by various factors, including the FDA’s other workload and public health priorities. Once FDA cleared, we expect to commercialize the Acuitas AMR Gene Panel for isolates more broadly to customers in the United States. The Acuitas AMR Gene Panel (Urine) test has been discontinued as part of the October 13, 2020 portfolio and pipeline strategy review.
- We are also developing novel bioinformatics tools and solutions to accompany or augment our current and potential future IVD products and may seek regulatory clearance for such bioinformatics tools and solutions to the extent they would be required either as part of our portfolio of IVD products or even as a standalone bioinformatics product.

Company Information

OpGen, Inc. was incorporated in Delaware in 2001. On July 14, 2015, we acquired AdvanDx, Inc., a Delaware corporation, as a wholly-owned subsidiary in a merger transaction. On September 3, 2019, we formed Crystal GmbH for the sole purpose of completing our business combination with Curetis GmbH, which closed on April 1, 2020. Our principal executive office is located at 9717 Key West Avenue, Suite 100, Rockville, MD 20850, and our telephone number is (240) 813-1260. We also have operations in Germany and Austria. Our website address is www.opgen.com. We do not incorporate the information on or accessible through our website into this prospectus, and you should not consider any information on, or that can be accessed through, our website as part of this prospectus.

RISK FACTORS

Investing in our securities involves substantial risks. In addition to other information contained in this prospectus and any accompanying prospectus supplement, before investing in our securities, you should carefully consider the risks described below and under the heading “Risk Factors” in our Annual Report on Form 10-K or in our most recent Quarterly Report on Form 10-Q, as they may be amended, and in any other documents incorporated by reference into this prospectus, as updated by our future filings. These risks are not the only ones faced by us. Additional risks not known or that are deemed immaterial could also materially and adversely affect our financial condition, results of operations, our products, business and prospects. Any of these risks might cause you to lose all or a part of your investment.

OpGen’s Certificate of Incorporation provides that the Court of Chancery of the State of Delaware will be the sole and exclusive forum for substantially all disputes between the Company and its stockholders, which could limit its stockholders’ ability to obtain a favorable judicial forum for disputes with the Company or its directors, officers or other employees.

OpGen’s Certificate of Incorporation provides that, unless OpGen consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware will be the sole and exclusive forum for (i) any derivative action or proceeding brought on behalf of OpGen, (ii) any action asserting a claim of breach of a fiduciary duty owed by any director, officer or other employee of OpGen or its stockholders, (iii) any action asserting a claim arising pursuant to any provision of the DGCL or the Company’s Certificate of Incorporation or Bylaws, or (iv) any action asserting a claim governed by the internal affairs doctrine. This exclusive forum provision is intended to apply to claims arising under Delaware state law and would not apply to claims brought pursuant to the Securities Act or Exchange Act, or any other claim for which the federal courts have exclusive jurisdiction. The exclusive forum provision in OpGen’s Certificate of Incorporation will not relieve OpGen of its duties to comply with the federal securities laws and the rules and regulations thereunder, and stockholders of OpGen will not be deemed to have waived OpGen’s compliance with these laws, rules and regulations.

This exclusive forum provision may limit a stockholder’s ability to bring a claim in a judicial forum of its choosing for disputes with OpGen or its directors, officers or other employees, which may discourage lawsuits against OpGen and its directors, officers and other employees. In addition, stockholders who do bring a claim in the Court of Chancery of the State of Delaware could face additional litigation costs in pursuing any such claim, particularly if they do not reside in or near Delaware. The Court of Chancery of the State of Delaware may also reach different judgments or results than would other courts, including courts where a stockholder would otherwise choose to bring the action, and such judgments or results may be more favorable to OpGen than to its stockholders. However, the enforceability of similar exclusive forum provisions in other companies’ certificates of incorporation has been challenged in legal proceedings, and it is possible that a court could find this type of provision to be inapplicable to, or unenforceable in respect of, one or more of the specified types of actions or proceedings. If a court were to find the exclusive forum provision contained in OpGen’s Certificate of Incorporation to be inapplicable or unenforceable in an action, OpGen might incur additional costs associated with resolving such action in other jurisdictions.

USE OF PROCEEDS

Unless otherwise indicated in the applicable prospectus supplement, we intend to use the net proceeds from the sale of our securities under this prospectus to: (i) support research and development and regulatory activities in support of our FDA 510(k) submission for the Acuitas AMR Gene Panel test for isolates; (ii) commercialize our products with a focus on the Unyvero platform and diagnostic tests, and the Acuitas AMR Gene Panel test for isolates; (iii) support further development and commercialization of the Ares Genetics database and Acuitas Lighthouse Software; (iv) support directed sales and marketing efforts to the customers and collaborators for our products and services, (v) repay outstanding indebtedness, and (vi) invest in manufacturing and operations infrastructure to support sales of products. We intend to use the remaining net proceeds for working capital and other general corporate purposes.

Each time we issue securities, we will provide a prospectus supplement that will contain information about how we intend to use the proceeds from each such offering.

We cannot guarantee that we will receive any proceeds in connection with any offering hereunder because we may choose not to issue any of the securities covered by this prospectus.

PLAN OF DISTRIBUTION

Primary Offerings by the Company

We may sell securities registered hereunder:

- through underwriters;
- through dealers;
- through agents;
- directly to purchasers;
- through registered direct offerings;
- through “at the market” offerings, within the meaning of Rule 415(a)(4) of the Securities Act, to or through a market maker or into an existing trading market on an exchange or otherwise; or
- through a combination of any of these methods or any other method permitted by law.

In addition, we may issue the securities as a dividend or distribution or in a subscription rights offering to our existing security holders.

We may directly solicit offers to purchase our securities, or agents may be designated to solicit such offers. In the prospectus supplement relating to such offering, we will name any agent that could be viewed as an underwriter under the Securities Act and describe any commissions that we must pay to any such agent. Any such agent will be acting on a best efforts basis for the period of its appointment or, if indicated in the applicable prospectus supplement, on a firm commitment basis. This prospectus may be used in connection with any offering of our securities through any of these methods or other methods described in the applicable prospectus supplement.

The distribution of our securities may be effected from time to time in one or more transactions:

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

Each prospectus supplement will describe the method of distribution of the securities sold hereunder and any applicable restrictions.

The prospectus supplement with respect to securities of a particular series will describe the terms of the offering of the securities, including the following:

- the name of the agent or any underwriters, if any;
- the public offering or purchase price;
- any discounts and commissions to be allowed or paid to the agent or underwriters;
- all other items constituting underwriting compensation;
- any discounts and commissions to be allowed or paid to dealers; and
- any exchanges on which the securities will be listed.

If any underwriters or agents are used in the sale of our securities in respect of which this prospectus is delivered, we will enter into an underwriting agreement, sales agreement or other agreement with them at the time of sale to them, and we will set forth in the prospectus supplement relating to such offering the names of the underwriters or agents and the terms of the related agreement with them.

In connection with the offering of our securities, we may grant to the underwriters an option to purchase additional securities with an additional underwriting commission, as may be set forth in the accompanying prospectus supplement. If we grant any such option, the terms of such option will be set forth in the prospectus supplement for such securities.

If a dealer is used in the sale of our securities in respect of which the prospectus is delivered, we will sell such securities to the dealer, as principal. The dealer, who may be deemed to be an “underwriter” as that term is defined in the Securities Act, may then resell such securities to the public at varying prices to be determined by such dealer at the time of resale.

If we offer securities in a subscription rights offering to our existing security holders, we may enter into a standby underwriting agreement with dealers, acting as standby underwriters. We may pay the standby underwriters a commitment fee for the securities they commit to purchase on a standby basis. If we do not enter into a standby underwriting arrangement, we may retain a dealer-manager to manage a subscription rights offering for us.

Agents, underwriters, dealers and other persons may be entitled under agreements which they may enter into with us to indemnification by us against certain civil liabilities, including liabilities under the Securities Act, and may be customers of, engage in transactions with or perform services for us in the ordinary course of business.

Certain agents, underwriters and dealers, and their associates and affiliates, may be customers of, have borrowing relationships with, engage in other transactions with, or perform services, including investment banking services, for us or one or more of our respective affiliates in the ordinary course of business.

In order to facilitate the offering of our securities, any underwriters may engage in transactions that stabilize, maintain or otherwise affect the price of our common stock or any other securities the prices of which may be used to determine payments on such common stock or other securities. Specifically, any underwriters may over-allot in connection with the offering, creating a short position for their own accounts. In addition, to cover overallocations or to stabilize the price of the common stock or of any such other securities, the underwriters may bid for, and purchase, the common stock or any such other securities in the open market. Finally, in any offering of our securities through a syndicate of underwriters, the underwriting syndicate may reclaim selling concessions allowed to an underwriter or a dealer for distributing our securities in the offering if the syndicate repurchases previously distributed securities in transactions to cover syndicate short positions, in stabilization transactions or otherwise. Any of these activities may stabilize or maintain the market price of our securities above independent market levels. Any such underwriters are not required to engage in these activities and may end any of these activities at any time.

We may engage in “at the market offerings” within the meaning of Rule 415(a)(4) under the Securities Act, to or through a market maker or into an existing trading market on an exchange or otherwise. In addition, we may enter into derivative transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. If the applicable prospectus supplement so indicates, in connection with those derivatives, the third parties may sell securities covered by this prospectus and the applicable prospectus supplement, including in short sale transactions. If so, the third party may use securities pledged by us or borrowed from us or others to settle those sales or to close out any related open borrowings of securities, and may use securities received from us in settlement of those derivatives to close out any related open borrowings of securities. The third party in such sale transactions will be an underwriter and, if not identified in this prospectus, will be named in the applicable prospectus supplement (or a post-effective amendment). In addition, we may otherwise loan or pledge securities to a financial institution or other third party that in turn may sell the securities short using this prospectus and an applicable prospectus supplement. Such financial institution or other third party may transfer its economic short position to investors in our securities or in connection with a concurrent offering of other securities.

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

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

The anticipated date of delivery of offered securities will be set forth in the applicable prospectus supplement relating to each offer.

We will bear all costs, expenses and fees in connection with the registration of the securities, as well as the expense of all commissions and discounts, if any, attributable to sales of the securities by us.

DESCRIPTION OF SECURITIES

The following is a summary of the rights of our common and preferred stock and our outstanding warrants, and some of the provisions of our amended and restated certificate of incorporation, as amended, or our Certificate of Incorporation, and our amended and restated bylaws, or our Bylaws, and the Delaware General Corporation Law, or the DGCL. Because it is only a summary, it does not contain all of the information that may be important to you. Such summary is subject to and qualified in its entirety by our Certificate of Incorporation and our Bylaws, a copy of each of which has been incorporated as an exhibit to the registration statement of which this prospectus forms a part.

Our common stock, par value \$0.01 per share, trading symbol OPGN is registered under Section 12(b) of the Securities Exchange Act of 1934, as amended.

General

We, directly or through one or more underwriters, dealers and agents designated from time to time, or directly to purchasers, or through a combination of these methods, may offer, issue and sell, together or separately, in one or more offerings, the following securities:

- shares of our common stock;
- shares of our preferred stock, in one or more series;
- warrants to purchase shares of our common stock or preferred stock;
- units consisting of any combination of the securities listed above, each on terms to be determined at the time of sale.

The preferred stock may also be exchangeable for and/or convertible into shares of common stock, another series of preferred stock, or other securities. The common stock, preferred stock, warrants, and units are collectively referred to in this prospectus as the “securities.” When a particular series of securities is offered, a supplement to this prospectus will be delivered with this prospectus, which will set forth the terms of the offering and sale of the offered securities.

Authorized Capital Stock

As of July 31, 2021, our authorized capital stock consists of 50,000,000 shares of common stock, par value \$0.01 per share, and 10,000,000 shares of preferred stock, par value \$0.01 per share. As of July 31, 2021, 38,270,250 shares of our common stock are issued and outstanding and 10,981,518 shares of common are reserved for future issuance upon exercise of outstanding stock options and warrants.

Common Stock

The holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of the stockholders. The holders of our common stock do not have any cumulative voting rights. Our Board of Directors are elected to a one year term; the Company does not have a staggered board. Holders of our common stock are entitled to receive ratably any dividends declared by the Board of Directors out of funds legally available for that purpose, subject to any preferential dividend rights of any outstanding preferred stock. Our common stock has no preemptive rights, conversion rights or other subscription rights or redemption or sinking fund provisions.

In the event of our liquidation, dissolution or winding up, holders of our common stock will be entitled to share ratably in all assets remaining after payment of all debts and other liabilities and any liquidation preference of any outstanding preferred stock.

Preferred Stock

Undesignated Preferred Stock

Our Board of Directors has the authority, without further action by our stockholders, to issue from time to time 10,000,000 shares of preferred stock in one or more series. Our Board of Directors will have the authority to establish the number of shares to be included in each series and fix the powers, preferences and rights of the shares of each wholly unissued series and any of its qualifications, limitations or restrictions. Our Board of Directors will also be able to increase or decrease the number of shares of any series, but not below the number of shares of that series then outstanding, without any further vote or action by the stockholders.

The issuance of preferred stock could decrease the amount of earnings and assets available for distribution to the holders of common stock or adversely affect the rights and powers, including voting rights, of the holders of common stock. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could, among other things, have the effect of delaying, deferring or preventing a change in control of our Company, which could depress the market price of our common stock.

Warrants

We may issue warrants, in one or more series, for the purchase of our common stock or preferred stock. Warrants may be issued independently or together with our common stock or preferred stock and may be attached to or separate from any offered securities.

A prospectus supplement accompanying this prospectus relating to a particular series of warrants will describe the terms of those warrants, including:

- the title and the aggregate number of warrants,
- the security for which each warrant is exercisable,
- the date or dates on which the right to exercise such warrants commence and expire,
- the price or prices at which such warrants are exercisable,
- the periods during which and places at which such warrants are exercisable,
- the terms of any mandatory or optional call provisions,
- the price or prices, if any, at which the warrants may be redeemed at the option of the holder or will be redeemed upon expiration,
- the identity of the warrant agent, and
- the exchanges, if any, on which such warrants may be listed, if any.

You should read the particular terms of the documents pursuant to which the warrants will be issued, which will be described in more detail in the applicable prospectus supplement.

Outstanding Warrants

As of the date of this prospectus, we have outstanding warrants to purchase shares of our common stock to various persons and entities, under which we could be obligated to issue up to 8,717,963 shares of common stock, including:

- 986,931 shares of common stock issuable upon the exercise of outstanding warrants granted as of December 31, 2020, at a weighted average exercise price of \$22.30 per share;
- 4,583,332 shares of common stock issuable upon the exercise of common warrants issued to purchasers and placement agent in our registered direct offering in February 2021, at an exercise price of \$3.55 per share; and
- 3,147,700 shares of common stock issuable upon the exercise of common warrants issued to purchasers in our warrant exercise transaction in March 2021, at an exercise price of \$3.56 per share.

Warrants issued in Bridge Financing

Pursuant to the Note Purchase Agreement and the underlying transactions, the Company has issued warrants to purchase shares of its common stock to jVen Capital, LLC in an amount equal to 20% of the principal of each of the two bridge financing notes issued, or the jVen Capital Warrants, and warrants to purchase shares of its common stock to Merck Global Health Innovation Fund in an amount equal to 20% of an amended and restated note issued by the Company to Merck Global Health Innovation Fund on June 28, 2017, the date of issuance. The warrants each have a five year term from issuance, are first exercisable on the date that is six months after the date of issuance and have an exercise price equal to 110% of the closing price of the Company's common stock on the date immediately prior to the date of issuance. The terms of the warrants issued in connection with such notes (other than the exercise price and the number of shares) may be amended, in the discretion of the holder, to reflect the terms of the warrants issued in our public offering transaction in July 2017 described below.

The jVen Capital Warrants each include a blocker provision that prevents the exercise of the jVen Capital Warrants if such exercise, when aggregated with the other issuances contemplated under the Note Purchase Agreement, would violate Nasdaq Listing Rule 5635, unless stockholder approval is first obtained by the Company.

Warrants issued in the July 2017 Public Offering

The Company issued warrants in connection with its public offering transaction in July 2017. The common warrants issued in the July 2017 public offering entitle the registered holder to purchase one five-hundredths of a share of common stock at an exercise price of \$212.50 per share. In addition, the Company issued warrants to the placement agent that have an exercise price of \$250.00 per share of common stock. All of the warrants issued in the July 2017 public offering were immediately exercisable and have a five-year term from the date of issuance.

Warrants issued in the February 2018 Public Offering

The Company issued warrants in connection with its public offering transaction in February 2018. The common warrants issued in the February 2018 public offering entitle the registered holder to purchase one-fortieth of a share of common stock at an exercise price of \$65.00 per share. In addition, the Company issued warrants to the placement agent that have an exercise price of \$81.25 per share of common stock. All of the warrants issued in the February 2018 public offering are immediately exercisable and have a five-year term from the date of issuance.

Common Warrants in the October 2019 Offering

The following is a summary of certain terms and provisions of the common warrants issued by us to purchasers and the placement agent in connection with our private placement offering of units and pre-funded units in October 2019.

Duration and Exercise Price

Each common warrant included in the units and the pre-funded units has an initial exercise price per share equal to \$2.00. In addition, the Company issued warrants to the placement agent that have an exercise price of \$2.60 per share. The common warrants are immediately exercisable and will expire on the fifth anniversary of the original issuance date. The exercise price and number of shares of common stock issuable upon exercise is subject to appropriate adjustment in the event of stock dividends, stock splits, reorganizations or similar events affecting our common stock and the exercise price. The common warrants were issued separately from the common stock included in the units, or the pre-funded warrants included in the pre-funded units, as the case may be, and may be transferred separately.

Cashless Exercise

If, at the time a holder exercises its common warrants, a registration statement registering the issuance of the shares of common stock underlying the common warrants under the Securities Act is not then effective or 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 net number of shares of common stock determined according to a formula set forth in the common warrants.

Exercisability

The common 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 (except in the case of a cashless exercise as discussed below). A holder (together with its affiliates) may not exercise any portion of the common warrant to the extent that the holder would own more than 4.99% of the outstanding common stock immediately after exercise, except that upon at least 61 days' prior notice from the holder to us, the holder may increase the amount of ownership of outstanding stock after exercising the holder's common warrants 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 common warrants.

Fractional Shares

No fractional shares of common stock will be issued upon the exercise of the common warrants. Rather, the number of shares of common stock to be issued will, at our election, either be rounded up to the nearest whole number or we will pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the exercise price.

Transferability

Subject to applicable laws, a common warrant may be transferred at the option of the holder upon surrender of the common warrant to us together with the appropriate instruments of transfer.

Trading Market

There is no trading market available for the common warrants on any securities exchange or nationally recognized trading system.

Right as a Stockholder

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

Fundamental Transaction

In the event of a fundamental transaction which is within our control, the holders of the common warrants have the right to require us or a successor entity to redeem the common warrant for cash in the amount of the Black-Scholes value of the unexercised portion of the common warrant on the date of the consummation of the fundamental transaction. In the event of a fundamental transaction which not in our control, including a fundamental transaction that is not approved by our Board, the holders of the common warrants have the right to require us or a successor entity to redeem the common warrant for the consideration paid in the fundamental transaction in the amount of the Black Scholes value of the unexercised portion of the common warrant on the date of the consummation of the fundamental transaction.

Common Warrants in February 2021 Offering

The following is a summary of certain terms and provisions of the common warrants issued by us to purchasers and the placement agent in connection with our registered direct offering of shares of common stock, common warrants and pre-funded warrants in February 2021.

Duration and Exercise Price

Each common warrant issued to purchasers has an initial exercise price per share equal to \$3.55. In addition, the Company issued warrants to the placement agent that have an exercise price of \$3.90 per share. The common warrants were exercisable on the six month anniversary of their issuance and will expire on the five-and-a-half year anniversary of the original issuance date. The exercise price and number of shares of common stock issuable upon exercise is subject to appropriate adjustment in the event of stock dividends, stock splits, reorganizations or similar events affecting our common stock and the exercise price. The common warrants were issued separately from the common stock or pre-funded warrants issued in the offering and may be transferred separately.

Cashless Exercise

If, at the time a holder exercises its common warrants, a registration statement registering the issuance of the shares of common stock underlying such warrants under the Securities Act is not then effective or 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 net number of shares of common stock determined according to a formula set forth in the common warrants.

Exercisability

The common 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 (except in the case of a cashless exercise as discussed below). A holder (together with its affiliates) may not exercise any portion of the common warrant to the extent that the holder would own more than 4.99% of the outstanding common stock immediately after exercise, except that upon at least 61 days' prior notice from the holder to us, the holder may increase the amount of ownership of outstanding stock after exercising the holder's common warrants 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 common warrants, as applicable.

Fractional Shares

No fractional shares of common stock will be issued upon the exercise of the common warrants. Rather, the number of shares of common stock to be issued will, at our election, either be rounded up to the nearest whole number or we will pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the exercise price.

Transferability

Subject to applicable laws, a common warrant may be transferred at the option of the holder upon surrender of the warrant to us together with the appropriate instruments of transfer.

Trading Market

There is no trading market available for the common warrants on any securities exchange or nationally recognized trading system.

Right as a Stockholder

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

Fundamental Transaction

In the event of a fundamental transaction which is within our control, the holders of the common warrants have the right to require us or a successor entity to redeem the common warrant for cash in the amount of the Black-Scholes value of the unexercised portion of the common warrant on the date of the consummation of the fundamental transaction. In the event of a fundamental transaction which not in our control, including a fundamental transaction that is not approved by our Board, the holders of the common warrants have the right to require us or a successor entity to redeem the common warrant for the consideration paid in the fundamental transaction in the amount of the Black Scholes value of the unexercised portion of the common warrant on the date of the consummation of the fundamental transaction.

Common Warrants in March 2021 Warrant Exercise Transaction and November 2020 Placement Agent Warrants

In November 2020, the Company consummated a private placement transaction of common stock that included the issuance of 4,842,615 common warrants to the purchaser and 242,130 common warrants to the placement agent. In March 2021, the Company completed a warrant exercise transaction pursuant to which the purchaser exercised the remaining common warrants in exchange for an aggregate amount of 3,147,700 warrants. The following is a summary of certain terms and provisions of the common warrants issued by us in connection with our warrant exercise transaction in March 2021 as well as the common warrants issued to the placement agent in connection with the private placement transaction in November 2020.

Duration and Exercise Price

Each common warrant issued in the warrant exercise transaction has an initial exercise price per share equal to \$3.56. In addition, the common warrants issued to the placement agent in the November 2020 private placement that have an exercise price of \$2.6845 per share. The common warrants were immediately exercisable and expire on the five year anniversary of the original issuance date. The exercise price and number of shares of common stock issuable upon exercise is subject to appropriate adjustment in the event of stock dividends, stock splits, reorganizations or similar events affecting our common stock and the exercise price.

Cashless Exercise

If, at the time a holder exercises its common warrants, a registration statement registering the issuance of the shares of common stock underlying such warrants under the Securities Act is not then effective or 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 net number of shares of common stock determined according to a formula set forth in the common warrants.

Exercisability

The common 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 (except in the case of a cashless exercise as discussed below). A holder (together with its affiliates) may not exercise any portion of the common warrant to the extent that the holder would own more than 4.99% of the outstanding common stock immediately after exercise, except that upon at least 61 days' prior notice from the holder to us, the holder may increase the amount of ownership of outstanding stock after exercising the holder's common warrants 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 common warrants, as applicable.

Fractional Shares

No fractional shares of common stock will be issued upon the exercise of the common warrants. Rather, the number of shares of common stock to be issued will, at our election, either be rounded up to the nearest whole number or we will pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the exercise price.

Transferability

Subject to applicable laws, a common warrant may be transferred at the option of the holder upon surrender of the warrant to us together with the appropriate instruments of transfer.

Trading Market

There is no trading market available for the common warrants on any securities exchange or nationally recognized trading system.

Right as a Stockholder

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

Fundamental Transaction

In the event of a fundamental transaction which is within our control, the holders of the common warrants have the right to require us or a successor entity to redeem the common warrant for cash in the amount of the Black-Scholes value of the unexercised portion of the common warrant on the date of the consummation of the fundamental transaction. In the event of a fundamental transaction which not in our control, including a fundamental transaction that is not approved by our Board, the holders of the common warrants have the right to require us or a successor entity to redeem the common warrant for the consideration paid in the fundamental transaction in the amount of the Black Scholes value of the unexercised portion of the common warrant on the date of the consummation of the fundamental transaction.

Units

We may issue units consisting of one or more warrants, shares of preferred stock, shares of common stock or any combination of such securities. The applicable prospectus supplement will describe the terms of the units and of the securities comprising the units, including whether and under what circumstances the securities comprising the units may be traded separately. You should read the particular terms of the documents pursuant to which the units will be issued, which will be described in more detail in the applicable prospectus supplement.

Registration Rights

Investors' Rights Agreement

Under the Third Amended and Restated Investors' Rights Agreement, dated as of December 18, 2013, among the Company and certain investors, or the investors' rights agreement, we granted registration rights to the holders of shares acquired prior to our initial public offering, or their permitted transferees. These rights are provided under the terms of the investors' rights agreement, and include demand registration rights, short-form registration rights and piggyback registration rights. All fees, costs and expenses of underwritten registrations will be borne by us and all selling expenses, including underwriting discounts and selling commissions, will be borne by the holders of the shares being registered. As of the date of this prospectus, the holders of 11,619 shares of our common stock have registration rights under the investors' rights agreement. The investors' rights agreement contains customary cross-indemnification provisions, under which we are obligated to indemnify holders of registrable shares in the event of material misstatements or omissions in the registration statement attributable to us, and they are obligated to indemnify us for material misstatements or omissions attributable to them. The registration rights granted under the investors' rights agreement will terminate at the earlier of the closing of a deemed liquidation event and when all of the holders of registrable securities are eligible to be sold without restrictions under Rule 144 promulgated under the Securities Act within any 90-day period.

Bridge Financing Registration Rights

In connection with the bridge financing the Company entered into a registration rights agreement with jVen Capital and with MGHIF, pursuant to which the investors were granted certain demand registration rights and piggyback registration rights in connection with subsequent registered offerings of the Company's common stock. The registrable securities include the shares of common stock underlying the warrants issued to jVen Capital and to MGHIF under the terms of the bridge financing promissory notes.

Anti-Takeover Effects of Our Certificate of Incorporation, Bylaws and Delaware Law

Our Certificate of Incorporation and Bylaws include a number of provisions that may have the effect of delaying, deferring or preventing another party from acquiring control of us and encouraging persons considering unsolicited tender offers or other unilateral takeover proposals to negotiate with our Board of Directors rather than pursue non-negotiated takeover attempts. These provisions include the items described below.

Meetings of Stockholders

Our Certificate of Incorporation and Bylaws provide that only the Chair of the Board, the Chief Executive Officer or a majority of the members of our Board of Directors then in office may call special meetings of stockholders and only those matters set forth in the notice of the special meeting may be considered or acted upon at a special meeting of stockholders. Our Bylaws limit the business that may be conducted at an annual meeting of stockholders to those matters properly brought before the meeting.

Advance Notice Requirements

Our Bylaws establish advance notice procedures with regard to stockholder proposals relating to the nomination of candidates for election as directors or new business to be brought before meetings of our stockholders. These procedures provide that notice of stockholder proposals must be timely given in writing to our corporate secretary prior to the meeting at which the action is to be taken. Generally, to be timely, notice must be received at our principal executive offices not less than 90 days nor more than 120 days prior to the first anniversary date of the annual meeting for the preceding year. Our Bylaws specify the requirements as to form and content of all stockholders' notices. These requirements may preclude stockholders from bringing matters before the stockholders at an annual or special meeting.

Amendment to Certificate of Incorporation and Bylaws

Any amendment of our Certificate of Incorporation must first be approved by a majority of our Board of Directors, and if required by law or our Certificate of Incorporation, must thereafter be approved by a majority of the outstanding shares entitled to vote on the amendment, except that the amendment of the provisions relating to stockholder action, board composition, limitation of liability and the amendment of our Certificate of Incorporation must be approved by not less than 66 2/3% of the outstanding shares entitled to vote on the amendment, and not less than 66 2/3% of the outstanding shares of each class entitled to vote thereon as a class. Our Bylaws may be amended by the affirmative vote of a majority of the directors then in office, subject to any limitations set forth in the bylaws; and may also be amended by the affirmative vote of at least 66 2/3% of the outstanding shares entitled to vote on the amendment, or, if our board of directors recommends that the stockholders approve the amendment, by the affirmative vote of the majority of the outstanding shares entitled to vote on the amendment, in each case voting together as a single class.

Exclusive Jurisdiction for Certain Actions

Our Certificate of Incorporation provides that, once our common stock is a “covered security,” unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers or other employees to us or our stockholders, (iii) any action asserting a claim arising pursuant to any provision of the Delaware General Corporation Law, our certificate of incorporation or our bylaws, or (iv) any action asserting a claim against us governed by the internal affairs doctrine. Although we believe this provision benefits us by providing increased consistency in the application of Delaware law in the types of lawsuits to which it applies, the provision may have the effect of discouraging lawsuits against our directors and officers. The enforceability of similar exclusive forum provisions in other companies’ certificates of incorporation has been challenged in legal proceedings, and it is possible that a court could rule that this provision in our certificate of incorporation is inapplicable or unenforceable. In addition, this exclusive forum provision is intended to apply to claims arising under Delaware state law and would not apply to claims brought pursuant to the Securities Act or the Exchange Act or any other claim for which the federal courts have exclusive jurisdiction. To the extent the provision could be construed to apply to such claims, there is uncertainty as to whether a court would enforce the provision in such respect, and our stockholders will not be deemed to have waived compliance with federal securities laws and the rules and regulations thereunder.

Section 203 of the Delaware General Corporation Law

We are subject to the provisions of Section 203 of the Delaware General Corporation Law. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a “business combination” with an “interested stockholder” for a three-year period following the time that this stockholder becomes an interested stockholder, unless the business combination is approved in a prescribed manner. Under Section 203, a business combination between a corporation and an interested stockholder is prohibited unless it satisfies one of the following conditions:

- before the stockholder became interested, our Board of Directors approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
- upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding, shares owned by persons who are directors and also officers, and employee stock plans, in some instances, but not the outstanding voting stock owned by the interested stockholder; or
- at or after the time the stockholder became interested, the business combination was approved by our Board of Directors and authorized at an annual or special meeting of the stockholders by the affirmative vote of at least two-thirds of the outstanding voting stock which is not owned by the interested stockholder.

Section 203 defines a business combination to include:

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

In general, Section 203 defines an interested stockholder as any entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with or controlling or controlled by the entity or person.

Listing

Our common stock is listed on the Nasdaq Capital Market under the symbol “OPGN.”

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Philadelphia Stock Transfer, Inc. The transfer agent’s address is 2320 Haverford Rd., Suite 230, Ardmore, PA 19003.

LEGAL MATTERS

Certain legal matters with respect to the securities offered hereby have been passed upon by Ballard Spahr LLP.

EXPERTS

The consolidated financial statements of OpGen, Inc. and its subsidiaries as of December 31, 2020 and 2019, and for the years then ended, have been incorporated by reference herein in reliance upon the report, also incorporated by reference herein, of CohnReznick LLP, an independent registered public accounting firm, and upon the authority of said firm as experts in accounting and auditing. The audit report covering the December 31, 2020 consolidated financial statements contains an explanatory paragraph that states that the Company has experienced losses and negative cash flows from operations since its inception, has an accumulated deficit, and has debt obligations which raise substantial doubt about its ability to continue as a going concern. The consolidated financial statements do not include any adjustments that might result from the outcome of that uncertainty.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We filed with the SEC a registration statement under the Securities Act of 1933 for the Warrant Shares under this prospectus. This prospectus does not contain all of the information in the registration statement and the exhibits and schedule that were filed with the registration statement. For further information with respect to us and our Common Stock, we refer you to the registration statement and the exhibits and schedule that were filed with the registration statement. Statements contained in this prospectus about the contents of any contract or any other document that is filed as an exhibit to the registration statement are not necessarily complete, and we refer you to the full text of the contract or other document filed as an exhibit to the registration statement. The SEC maintains a website that contains reports, proxy and information statements, and other information regarding registrants that file electronically with the SEC. The address of the website is www.sec.gov.

We file periodic reports under the Securities Exchange Act of 1934, including annual, quarterly and special reports, and other information with the Securities and Exchange Commission. These periodic reports and other information are available for inspection and copying at the SEC regional offices, public reference facilities and on the website of the SEC referred to above.

We make available free of charge on or through our internet website 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 as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. The information found on our website, www.opgen.com, other than as specifically incorporated by reference in this prospectus, is not part of this prospectus.

INCORPORATION BY REFERENCE

The SEC allows us to “incorporate by reference” in this prospectus the information in other documents that we file with it, which means that we can disclose important information to you by referring you to those documents containing such information. This prospectus is part of a registration statement we filed with the SEC. You should rely on the information incorporated by reference in this prospectus and the registration statement. The information incorporated by reference is considered to be part of this prospectus and information we file later with the SEC will automatically update and supersede this information and information contained in documents filed earlier with the SEC. We incorporate by reference the documents listed below, any filings made with the SEC after the date of the initial registration statement and prior to effectiveness of the registration statement, and any future filings made with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act prior to the termination of the offering; provided, that we are not incorporating by reference any documents or information deemed to have been furnished and not filed in accordance with SEC rules. The documents we are incorporating by reference are:

- our [Annual Report on Form 10-K for the year ended December 31, 2020, filed with the SEC on March 29, 2021](#);
- our Quarterly Reports on Form 10-Q for the quarters ended [March 31, 2021](#) and [June 30, 2021](#), filed with the SEC on May 14, 2021, and August 13, 2021, respectively;
- our Current Reports on Form 8-K filed with the SEC on [February 10, 2021 \(Items 1.01, 3.02, 8.01 and 9.01\)](#), [March 8, 2021 \(Items 5.02 and 8.01\)](#), [March 9, 2021 \(Items 1.01, 3.02 and 9.01\)](#), [June 9, 2021 \(Items 5.07, 8.01 and 9.01\)](#), [July 7, 2021 \(Items 8.01 and 9.01\)](#), [July 29, 2021 \(Item 5.02\)](#), [August 5, 2021 \(Item 8.01 and 9.01\)](#), [October 4, 2021 \(Items 8.01 and 9.01\)](#), and October 15, 2021 (Items 1.01, 3.03, 5.02, 5.03, 8.01 and 9.01);
- our proxy statement for the [Annual Meeting of Stockholders](#) held on June 9, 2021, filed with the SEC on April 26, 2021; and
- the description of our Common Stock contained in the Registration Statement on [Form 8-A](#) filed on April 30, 2015 and any amendments to such Registration Statement filed subsequently thereto, including all amendments or reports filed for the purpose of updating such description.

We will furnish to you, on written or oral request, a copy of any or all of the documents that have been incorporated by reference, including exhibits to these documents. You may request a copy of these filings at no cost by writing or telephoning our Secretary at the following address and telephone number:

OpGen, Inc.
Attention: Oliver Schacht, Chief Executive Officer
9717 Key West Avenue, Suite 100
Rockville, MD 20850
Telephone No.: (240) 813-1260

5,360,000 Shares of Common Stock

33,810 Shares of Preferred Stock

4,300,000 Shares of Common Stock Underlying Pre-funded Warrants



PROSPECTUS SUPPLEMENT

H.C. Wainwright & Co.

September 30, 2022