

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

**FORM S-3
REGISTRATION STATEMENT**
*UNDER
THE SECURITIES ACT OF 1933*

OPGEN, INC.

(Exact Name of Registrant as Specified in Its Charter)

Delaware
(State or Other Jurisdiction of
Incorporation or Organization)

06-1614015
(I.R.S. Employer
Identification Number)

708 Quince Orchard Road, Suite 205
Gaithersburg, MD 20878
(301) 869-9683

(Address, Including Zip Code, and Telephone Number, Including Area Code, of Registrant's Principal Executive Offices)

Oliver Schacht, Ph.D.
Chief Executive Officer
708 Quince Orchard Road, Suite 205
Gaithersburg, MD 20878
(301) 869-9683

(Name, Address, Including Zip Code, and Telephone Number, Including Area Code, of Agent for Service)

With a copy to:
Peter Jaslow, Esquire
Ballard Spahr LLP
1735 Market Street, 51st Floor
Philadelphia, PA 19103
(215) 665-8500

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

If the only securities being registered on this form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.

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

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

If this form is a registration statement filed pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

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

Large Accelerated Filer	<input type="checkbox"/>	Accelerated Filer	<input type="checkbox"/>
Non-Accelerated Filer	<input type="checkbox"/>	Smaller Reporting Company	<input checked="" type="checkbox"/>
		Emerging Growth Company	<input checked="" type="checkbox"/>

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

CALCULATION OF REGISTRATION FEE

Title of Securities to be Registered	Amount to be Registered (1)	Proposed Maximum Offering Price Per Share(2)	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee
Common stock, par value \$0.01 per share	2,245,400	\$1.94	\$4,356,076.00	\$475.25
Shares of common stock underlying pre-funded warrants	2,597,215	\$1.94	\$5,038,597.10	\$549.71
Shares of common stock underlying common warrants	4,842,615	\$1.94	\$9,394,673.10	\$1,024.96

- (1) The Registrant is hereby registering for resale from time to time by the selling stockholder named herein of up to (i) 2,245,400 shares of common stock, par value \$0.01 per share, (ii) 2,597,215 pre-funded warrants to purchase shares of common stock, and (iii) 4,842,615 shares of common stock issuable upon exercise of common warrants, all of which were initially issued pursuant to the Securities Purchase Agreement, dated as of November 23, 2020, by and between the Registrant and the selling stockholder.
- (2) Estimated solely for the purpose of calculating the registration fee in accordance with Rule 457(c) under the Securities Act, based upon the average of the high and low sales price of our common stock as reported on the Nasdaq Capital Market on November 20, 2020.

THE REGISTRANT HEREBY AMENDS THIS REGISTRATION STATEMENT ON SUCH DATE OR DATES AS MAY BE NECESSARY TO DELAY ITS EFFECTIVE DATE UNTIL THE REGISTRANT SHALL FILE A FURTHER AMENDMENT WHICH SPECIFICALLY STATES THAT THIS REGISTRATION STATEMENT SHALL THEREAFTER BECOME EFFECTIVE IN ACCORDANCE WITH SECTION 8(a) OF THE SECURITIES ACT OF 1933 OR UNTIL THE REGISTRATION STATEMENT SHALL BECOME EFFECTIVE ON SUCH DATE AS THE COMMISSION, ACTING PURSUANT TO SAID SECTION 8(a), MAY DETERMINE.

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

Subject to Completion, Dated November 25, 2020

PROSPECTUS



2,245,400 Shares of Common Stock
2,597,215 Shares of Common Stock Issuable Upon Exercise of Pre-Funded Warrants
4,842,615 Shares of Common Stock Issuable Upon the Exercise of Common Warrants

This prospectus relates to the resale by the selling stockholder named herein, from time to time, of up to (i) 2,245,400 shares of our common stock, \$0.01 par value per share, or the Common Stock, (ii) 2,597,215 shares of Common Stock, or the Pre-Funded Warrant Shares, issuable upon exercise of pre-funded warrants to purchase shares of Common Stock, or the Pre-Funded Warrants, and (iii) 4,842,615 shares of Common Stock, or the Common Warrant Shares, issuable upon exercise of the common stock purchase warrants, or the Common Warrants, all of which were initially issued pursuant to the Securities Purchase Agreement, dated as of November 23, 2020, or the Securities Purchase Agreement, by and between OpGen, Inc. and the selling stockholder. The shares of Common Stock, the Pre-Funded Warrant Shares, and the Common Warrant Shares are referred to herein as the Securities. We are registering the Securities on behalf of the selling stockholder, to be offered and sold from time to time, to satisfy certain registration rights that we have granted to the selling stockholder pursuant to the Securities Purchase Agreement.

The selling stockholder may resell or dispose of the Securities to or through underwriters, broker-dealers, agents, or through any other means described in the section of this prospectus entitled "Plan of Distribution." The selling stockholder will bear its commissions and discounts, if any, attributable to the sale or disposition of the Securities. We will bear all costs, expenses and fees in connection with the registration of the Securities. We will not receive any of the proceeds from the sale of the Securities by the selling stockholder.

Our Common Stock is traded on the Nasdaq Capital Market under the symbol "OPGN." On November 24, 2020, the closing price of our Common Stock was \$1.96 per share.

Investing in our securities involves a high degree of risk. Before making an investment decision, please read the information under "Risk Factors" beginning on page 6 of this prospectus and under similar headings in any amendment or supplement to this prospectus or in any filing with the Securities and Exchange Commission that is incorporated by reference herein.

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 _____, 2020

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PROSPECTUS 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 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, QuickFISH, PNA FISH, 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 will continue to develop and may seek FDA and other regulatory clearances or approvals, as applicable, for the Acuitas AMR Gene Panel (Isolates) diagnostic test and the Acuitas Lighthouse Software products. We will continue to offer the Acuitas AMR Gene Panel (Isolates) and Acuitas Lighthouse Software as well as the Unyvero UTI Panel as research-use-only products to hospitals, public health departments, clinical laboratories, pharmaceutical companies and contract research organizations.

Our focus is on our combined broad portfolio of products, which include high impact rapid diagnostics and bioinformatics to interpret AMR genetic data. On October 13, 2020, we announced our intention to focus on the following products for lower respiratory tract infection, urinary tract infection and invasive joint infections:

- The Unyvero Lower Respiratory Tract, or LRT, test is the first 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 now detects 20 pathogens and 10 antibiotic resistance markers, and it is the first and only FDA-cleared panel that includes now 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 validation and clinical verification and 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 validation and clinical verification and trials towards a future U.S. FDA submission.
- The Acuitas AMR Gene Panel (Isolates) is currently pending final FDA review and a potential clearance decision. The FDA recently notified us that the agency plans to continue prioritizing emergency use authorization requests for diagnostic products intended to address the COVID-19 pandemic for at least the remainder of the year, which will impact the statutory review periods for submissions, including the potential clearance decision on our Acuitas AMR Gene Panel (Isolates) submission. Once FDA cleared, we expect to commercialize the Acuitas AMR Gene Panel for isolates more broadly to customers in the U.S. The Acuitas AMR Gene Panel (Urine) test has been discontinued as part of the October 13, 2020 portfolio and pipeline strategy review.
- 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.

Private Placement

On November 23, 2020, we entered into the Securities Purchase Agreement with the selling stockholder, pursuant to which we issued and sold to the selling stockholder 2,245,400 newly issued shares of our Common Stock, Pre-Funded Warrants to purchase 2,597,215 shares of our Common Stock with an exercise price per share of \$0.01, and Common Warrants to purchase 4,842,615 shares of our Common Stock with an exercise price per share of \$1.94, for gross proceeds of approximately \$10.0 million, or the Private Placement. The Common Warrants are exercisable beginning on the sixth month anniversary of the date of issuance and have a five and one half (5.5) year term. The Pre-Funded Warrants are exercisable immediately and will expire when the Pre-Funded Warrants are exercised in full. Pursuant to the Securities Purchase Agreement, we agreed to register for resale by the selling stockholder the Securities. We will not receive any of the proceeds of sales by the selling stockholders of any of the shares of Common Stock covered by this prospectus.

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, or the AdvanDx Merger. 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 708 Quince Orchard Road, Gaithersburg, Maryland, 20878, 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.

THE OFFERING

Securities offered by the selling stockholder	2,245,400 shares of our Common Stock 2,597,215 Pre-Funded Warrant Shares 4,842,615 Common Warrant Shares
Terms of the offering	The selling stockholder will determine when and how it will sell the Common Stock offered in this prospectus, as described in “Plan of Distribution.”
Use of proceeds	We will not receive any proceeds from the sale of the shares of Common Stock covered by this prospectus.
Risk factors	See "Risk Factors" beginning on page 6, for a discussion of factors you should carefully consider before deciding to invest in our Common Stock.
Nasdaq Capital Market symbol	Our Common Stock is listed on the Nasdaq Capital Market under the symbol “OPGN.” On November 24, 2020 the last reported sale price of our Common Stock was \$1.96 per share.

ABOUT THIS PROSPECTUS

This prospectus is part of a resale registration statement that we filed with the U.S. Securities and Exchange Commission, or SEC. By using a resale registration statement, the selling stockholder may sell from time to time in one or more offerings the Common Stock described in this prospectus.

This prospectus provides you with a general description of the Company and our securities. 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 More Information.”

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 and your reliance on any unauthorized information or representation is at your own risk. This prospectus 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 is accurate only as of the date of this prospectus 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.

We own various U.S. federal trademark registrations and applications and unregistered trademarks and servicemarks, including OpGen[®], Curetis[®], Unyvero[®], ARES[®] and ARES GENETICS[®], Acuitas[®], Acuitas Lighthouse[®], AdvanDx[®], QuickFISH[®], and PNA FISH[®]. 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;
- our liquidity and working capital requirements, including our cash requirements over the next 12 months;
- 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 coronavirus pandemic on our business and operations;
- 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 and rapid pathogen ID testing products;
- regulations and changes in laws or regulations applicable to our business, including regulation by the FDA;
- our ability to maintain compliance with the ongoing listing requirements for the Nasdaq Capital Market;
- 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.

RISK FACTORS

Investing in our securities involves substantial risks. In addition to other information contained in this prospectus and in any accompanying prospectus supplement, 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.

The number of shares being registered for resale is significant in relation to the number of our outstanding shares of Common Stock.

We have filed a registration statement of which this prospectus is a part to register the shares offered hereunder for sale into the public market by the selling stockholder. These shares represent a large number of shares of our Common Stock, and if sold in the market all at once or at about the same time, could depress the market price of our Common Stock during the period the registration statement remains effective and could also affect our ability to raise equity capital.

USE OF PROCEEDS

We will not receive any of the proceeds from the sale or other disposition of the Securities held by the selling stockholder pursuant to this prospectus.

SELLING STOCKHOLDER

We have prepared this prospectus to allow the selling stockholder to sell or otherwise dispose of, from time to time, up to 2,245,400 Shares of Common Stock, 2,597,215 Pre-Funded Warrant Shares, and 4,842,615 Common Warrant Shares.

On November 23, 2020, we entered into a Securities Purchase Agreement with the selling stockholder, pursuant to which we issued and sold to the selling stockholder 2,245,400 newly issued shares of our Common Stock, Pre-Funded Warrants to purchase 2,597,215 shares of Common Stock at an exercise price per share of \$0.01, and Common Warrants to purchase 4,842,615 shares of Common Stock at an exercise price per share of \$1.94, for gross proceeds of approximately \$10.0 million. In connection with certain registration rights we granted to the selling stockholder in the Securities Purchase Agreement, we filed with the SEC a registration statement on Form S-3, of which this prospectus forms a part, with respect to the resale or other disposition of the Securities offered from time to time by the selling stockholder under this prospectus.

Beneficial ownership is determined in accordance with the rules of the SEC and includes voting or investment power with respect to shares of our Common Stock. Unless otherwise indicated below, to our knowledge, the selling stockholder named in the table have sole voting and investment power with respect to the shares of Common Stock beneficially owned by them. The number of shares of Common Stock beneficially owned prior to the offering for each selling stockholder includes (i) all shares of our Common Stock held by such selling stockholder prior to the Private Placement plus (ii) all shares of our Common Stock purchased by such selling stockholder pursuant to the Private Placement and being offered pursuant to the prospectus, as well as (iii) all options or other derivative securities held by such selling stockholder, which are exercisable within 60 days of November 25, 2020. The percentages of shares owned after the offering are based on 22,488,319 shares of our Common Stock outstanding as of November 25, 2020, which includes the outstanding Securities offered by this prospectus. The inclusion of any shares in this table does not constitute an admission of beneficial ownership by the person named below.

The selling stockholder may have sold or transferred, in transactions exempt from the registration requirements of the Securities Act, some or all of their shares of Common Stock since the date on which the information in the table below is presented. Information about the selling stockholder may change over time.

Name of Selling Stockholder	Beneficial Ownership Prior to this Offering		Securities Being Offered(2)	Beneficial Ownership After this Offering	
	Number	Percent		Number	Percent
Armistice Capital Master Fund Ltd. (1)	2,245,400(3)	9.98%	9,685,230	—	—

- (1) Armistice Capital, LLC, the investment manager of the selling stockholder, and Steven J. Boyd, the managing member of Armistice Capital, LLC hold shared voting and dispositive power over the shares of common stock and warrants held by the selling stockholder. The address for the selling stockholder is 510 Madison Avenue, 7th Floor, New York, NY 10022.
- (2) As further discussed in note (3) below, the Pre-Funded Warrants and Common Warrants are each subject to a 4.99% blocker. The securities reported in the table above show the number of shares of Common Stock that would be issuable upon full conversion and exercise of such reported securities and do not give effect to such blockers.
- (3) Consists of 2,245,400 shares of Common Stock. In addition, the selling stockholder holds (i) Pre-Funded Warrants to acquire 2,597,215 Pre-Funded Warrant Shares, and (ii) Common Warrants to acquire 4,842,615 Common Warrant Shares. While the Pre-Funded Warrant Shares and Common Warrant Shares are being registered under the registration statement of which this prospectus forms a part, pursuant to the terms of the Pre-Funded Warrants and Common Warrants, the selling stockholder is not permitted to exercise such warrants to purchase Common Stock to the extent that such exercise would result in the selling stockholder and its affiliates beneficially owning more than 4.99% of the number of shares of our Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon exercise of such warrants. The selling stockholder has the right to increase this beneficial ownership limitation in its discretion on 61 days' prior written notice to us, provided that in no event is the selling stockholder permitted to exercise such warrants to purchase common stock to the extent that such exercise would result in the selling stockholder and its affiliates beneficially owning in the aggregate more than 19.99% of the number of shares of our Common Stock outstanding or the combined voting power of our securities outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon exercise of such warrants.

Certain Relationships and Related Party Transactions

On November 23, 2020, we entered into the Securities Purchase Agreement, with the selling stockholder, pursuant to which we issued and sold to the selling stockholder 2,245,400 newly issued shares of our Common Stock, 2,597,215 Pre-Funded Warrants to purchase shares of Common Stock at an exercise price per share of \$0.01, and 4,842,615 Common Warrants to purchase shares of Common Stock at an exercise price per share of \$1.94, for gross proceeds of approximately \$10.0 million. The Private Placement closed on November 25, 2020.

Pursuant to the Securities Purchase Agreement, we agreed to prepare and file with the SEC within 2 days of the execution of the Securities Purchase Agreement a registration statement covering the resale of the shares of our Common Stock as well as the Pre-Funded Warrant Shares and Common Warrant Shares underlying the Pre-Funded Warrants and Common Warrants, respectively, sold to the selling stockholder, and to use commercially reasonable best efforts to cause the registration statement to become effective within 15 days of the closing date in the event of no review by the SEC, or 45 days in the event of a review by the SEC. We agreed to use commercially reasonable best efforts to keep the registration statement effective until the date on which all of the Securities sold in the Private Placement are sold by the selling stockholder. We are registering the shares to be sold by the selling stockholder under the registration statement of which this prospectus is a part to satisfy our obligation under the Securities Purchase Agreement.

PLAN OF DISTRIBUTION

The selling stockholder, and its pledgees, donees, transferees or other successors in interest, may from time to time offer and sell, separately or together, some or all of the Securities covered by this prospectus. Registration of the Securities covered by this prospectus does not mean, however, that those Securities necessarily will be offered or sold.

The Securities covered by this prospectus may be sold from time to time, at market prices prevailing at the time of sale, at prices related to market prices, at a fixed price or prices subject to change or at negotiated prices, by a variety of methods including the following:

- in the Nasdaq Capital Market;
- in privately negotiated transactions;
- through broker-dealers, who may act as agents or principals;
- through one or more underwriters on a firm commitment or best-efforts basis;
- in a block trade in which a broker-dealer will attempt to sell a block of securities as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- directly to one or more purchasers;
- through agents; or
- in any combination of the above.

In effecting sales, brokers or dealers engaged by the selling stockholder may arrange for other brokers or dealers to participate. Broker-dealer transactions may include:

- purchases of the Securities by a broker-dealer as principal and resales of the Securities by the broker-dealer for its account pursuant to this prospectus;
- ordinary brokerage transactions; or
- transactions in which the broker-dealer solicits purchasers on a best efforts basis.

To our knowledge, the selling stockholder has not entered into any agreements, understandings or arrangements with any underwriters or broker-dealers regarding the sale of the Securities covered by this prospectus. At any time a particular offer of the securities covered by this prospectus is made, a revised prospectus or prospectus supplement, if required, will be distributed which will set forth the aggregate amount of Securities covered by this prospectus being offered and the terms of the offering, including the name or names of any underwriters, dealers, brokers or agents. In addition, to the extent required, any discounts, commissions, concessions and other items constituting underwriters' or agents' compensation, as well as any discounts, commissions or concessions allowed or reallocated or paid to dealers, will be set forth in such revised prospectus supplement. Any such required prospectus supplement, and, if necessary, a post-effective amendment to the registration statement of which this prospectus is a part, will be filed with the SEC to reflect the disclosure of additional information with respect to the distribution of the securities covered by this prospectus.

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, 2019 and 2018, 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, 2019 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

We filed with the SEC a registration statement under the Securities Act of 1933 for the Securities 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, 2019](#), filed with the SEC on March 24, 2020;
- our Quarterly Reports on Form 10-Q for the quarters ended [March 31, 2020](#), [June 30, 2020](#) and [September 30, 2020](#), filed with the SEC on May 8, 2020, August 14, 2020, and November 16, 2020, respectively;

- our Current Reports on Form 8-K filed with the SEC on [January 23, 2020 \(Item 8.01\)](#); [January 30, 2020 \(Item 8.01 and 9.01\)](#); [February 12, 2020 \(Items 1.01 and 9.01\)](#); [February 12, 2020 \(Items 8.01 and 9.01\)](#); [February 20, 2020 \(Items 8.01 and 9.01\)](#); [February 28, 2020 \(Items 1.01 and 9.01\)](#); [March 10, 2020 \(Items 8.01 and 9.01\)](#); [March 16, 2020 \(Items 8.01 and 9.01\)](#); [March 19, 2020 \(Items 8.01 and 9.01\)](#); [March 24, 2020 \(Items 8.01 and 9.01, but only exhibit 99.2 thereof\)](#); [March 30, 2020 \(Items 5.07, 8.01 and 9.01\)](#); [April 2, 2020 \(Items 2.01, 5.02, 8.01 and 9.01\)](#), as amended on [June 15, 2020](#); [April 16, 2020 \(Item 8.01\)](#); [April 28, 2020 \(Items 1.01, 2.03 and 9.01\)](#); [May 7, 2020 \(Item 5.02\)](#); [May 11, 2020 \(Items 8.01 and 9.01\)](#); [June 3, 2020 \(Items 8.01 and 9.01\)](#); [July 13, 2020 \(Items 1.01, 2.03, 8.01 and 9.01\)](#); [July 14, 2020 \(Items 8.01 and 9.01\)](#); [July 15, 2020 \(Items 8.01 and 9.01\)](#); [August 10, 2020 \(Items 8.01 and 9.01\)](#), as amended on [August 12, 2020](#); [August 11, 2020 \(Items 5.02, 5.03, 5.08 and 9.01\)](#); [August 20, 2020 \(Items 8.01 and 9.01, but only exhibit 99.2 thereof\)](#); [October 2, 2020 \(Items 5.02 and 5.07\)](#); [October 15, 2020 \(Items 2.02 and 9.01\)](#); [November 2, 2020 \(Items 5.02 and 9.01\)](#); [November 13, 2020 \(Items 1.01, 8.01 and 9.01\)](#); and [November 24, 2020 \(Items 1.01, 3.02, 8.01 and 9.01\)](#);
- our [proxy statement](#) for the Annual Meeting of Stockholders held on September 30, 2020, filed with the SEC on August 20, 2020; 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: Timothy C. Dec, Corporate Secretary
708 Quince Orchard Road, Suite 205
Gaithersburg, MD 20878
Telephone No.: (240) 813-1260

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution.

The costs and expenses payable by the Company in connection with the offerings described in this registration statement are set forth below. The selling stockholder will not bear any portion of such expenses.

SEC registration fee	\$ 2,049.92
Legal fees and expenses	\$ 50,000.00*
Accounting fees and expenses	\$ 10,000.00*
Printer costs and expenses	\$ 450.08*
Total	<u>\$ 62,500.00</u>

*Estimated as permitted under Rule 511 of Regulation S-K.

Item 15. Indemnification of Directors and Officers.

Section 145 of the Delaware General Corporation Law, or the DGCL, authorizes a corporation to indemnify its directors and officers against liabilities arising out of actions, suits and proceedings to which they are made or threatened to be made a party by reason of the fact that they have served or are currently serving as a director or officer to a corporation. The indemnity may cover expenses (including attorneys' fees) judgments, fines and amounts paid in settlement actually and reasonably incurred by the director or officer in connection with any such action, suit or proceeding. Section 145 permits corporations to pay expenses (including attorneys' fees) incurred by directors and officers in advance of the final disposition of such action, suit or proceeding. In addition, Section 145 provides that a corporation has the power to purchase and maintain insurance on behalf of its directors and officers against any liability asserted against them and incurred by them in their capacity as a director or officer, or arising out of their status as such, whether or not the corporation would have the power to indemnify the director or officer against such liability under Section 145.

We have adopted provisions in our certificate of incorporation and bylaws that limit or eliminate the personal liability of our directors to the fullest extent permitted by the DGCL, as it now exists or may in the future be amended. Consequently, a director will not be personally liable to us or our stockholders for monetary damages or breach of fiduciary duty as a director, except for liability for:

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

These limitations of liability do not alter director liability under the federal securities laws and do not affect the availability of equitable remedies such as an injunction or rescission.

In addition, our bylaws provide that:

- we will indemnify our directors, officers and, in the discretion of our board of directors, certain employees to the fullest extent permitted by the DGCL, as it now exists or may in the future be amended; and

we will advance reasonable expenses, including attorneys' fees, to our directors and, in the discretion of our board of directors, to our officers and certain employees, in connection with legal proceedings relating to their service for or on behalf of us, subject to limited exceptions.

We have entered into indemnification agreements with each of our directors and executive officers. These agreements provide that we will indemnify each of our directors, such executive officers and, at times, their affiliates to the fullest extent permitted by Delaware law. We will advance expenses, including attorneys' fees (but excluding judgments, fines and settlement amounts), to each indemnified director, executive officer or affiliate in connection with any proceeding in which indemnification is available and we will indemnify our directors and officers for any action or proceeding arising out of that person's services as a director or officer brought on behalf of us and/or in furtherance of our rights. Additionally, each of our directors may have certain rights to indemnification, advancement of expenses and/or insurance provided by their affiliates, which indemnification relates to and might apply to the same proceedings arising out of such director's services as a director referenced herein. Nonetheless, we have agreed in the indemnification agreements that our obligations to those same directors are primary and any obligation of the affiliates of those directors to advance expenses or to provide indemnification for the expenses or liabilities incurred by those directors are secondary.

We also maintain general liability insurance which covers certain liabilities of our directors and officers arising out of claims based on acts or omissions in their capacities as directors or officers, including liabilities under the Securities Act.

A stockholder's investment may be adversely affected to the extent we pay the costs of settlement and damage awards against directors and officers as required by these indemnification provisions. At present, there is no pending litigation or proceeding involving any of our directors, officers or employees regarding which indemnification is sought, nor are we aware of any threatened litigation that may result in claims for indemnification.

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

Item 16. Exhibits.

The following exhibits are filed as part of, or incorporated by reference into this registration statement:

<u>Exhibit Number</u>	<u>Identification of Exhibit</u>
4.1	Form of Common Stock Certificate of the Registrant (incorporated by reference to Exhibit 4.1 to the Registrant's Annual Report on Form 10-K, filed on March 24, 2020).
4.2	Form of Common Stock Purchase Warrant (incorporated herein by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K, filed with the SEC on November 24, 2020)
4.3	Form of Pre-Funded Common Stock Purchase Warrant (incorporated herein by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K, filed with the SEC on November 24, 2020).
5.1 *	Opinion of Ballard Spahr LLP
10.1	Securities Purchase Agreement, dated November 23, 2020, by and between OpGen, Inc. and the purchaser party thereto (incorporated herein by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K, filed with the SEC on November 24, 2020).
10.2	Placement Agent Agreement, dated November 23, 2020, by and between OpGen, Inc. and A.G.P. (incorporated herein by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K, filed with the SEC on November 24, 2020).
23.1 *	Consent of CohnReznick LLP
23.2 *	Consent of Ballard Spahr LLP (included in Exhibit 5.1)
24.1 *	Power of Attorney (on signature page)

* Filed herewith.

Item 17. Undertakings.

(a) The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by section 10(a)(3) of the Securities Act of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the SEC pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

Provided, however, that:

Paragraphs (1)(i), (1)(ii) and (1)(iii) of this section do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the SEC by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

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

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

(4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:

(i) If the registrant is relying on Rule 430B:

(A) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(B) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof, provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date; or

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

(5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities:

The undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;

(iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(b) The undersigned registrant hereby further undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(c) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act of 1933, and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question of whether such indemnification by it is against public policy as expressed in said act and will be governed by the final adjudication of such issue.

(d) The undersigned registrant hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act of 1933, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.

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

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Gaithersburg, State of Maryland on the 25th day of November, 2020.

OpGen, Inc.

By: /s/ Oliver Schacht, Ph.D.
 Oliver Schacht, Ph.D.
 Chief Executive Officer and Director
 (principal executive officer)

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints each of Oliver Schacht, Ph.D. and Timothy C. Dec as true and lawful attorney-in-fact and agent, with full power of substitution and re-substitution, for them and in their name, place and stead, in any and all capacities, to sign any and all amendments (including pre-effective and post-effective amendments) to this registration statement and any additional registration statements filed pursuant to Rule 462, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission (the SEC), and generally to do all such things in their names and behalf in their capacities as officers and directors to enable the Company to comply with the provisions of the Securities Act of 1933 and all requirements of the SEC, granting unto each said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he or she might or could do in person, ratifying and confirming all that said attorney-in-fact and agent, or their or his or her substitutes or substitute, may lawfully do or cause to be done by virtue hereof.

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

Signature	Title	Date
<u>/s/ Oliver Schacht, Ph.D.</u> Oliver Schacht, Ph.D.	Chief Executive Officer and Director (principal executive officer)	November 25, 2020
<u>/s/ Timothy C. Dec</u> Timothy C. Dec	Chief Financial Officer (principal financial officer and principal accounting officer)	November 25, 2020
<u>/s/ Mario Crovetto</u> Mario Crovetto	Director	November 25, 2020
<u>/s/ R. Donald Elsey</u> R. Donald Elsey	Director	November 25, 2020
<u>/s/ Prabhavathi Fernandes, Ph.D.</u> Prabhavathi Fernandes, Ph.D.	Director	November 25, 2020
<u>/s/ Evan Jones</u> Evan Jones	Director	November 25, 2020
<u>/s/ William Rhodes</u> William Rhodes	Director	November 25, 2020

1735 Market Street, 51st Floor
Philadelphia, PA 19103-7599
TEL 215.665.8500
FAX 215.864.8999
www.ballardspahr.com

November 25, 2020

OpGen, Inc.
708 Quince Orchard Road
Suite 205
Gaithersburg, Maryland 20878

RE: OpGen, Inc. Form S-3 Registration Statement

Ladies and Gentlemen:

We have acted as counsel to OpGen, Inc., a Delaware corporation (the "Company"), in connection with the preparation of a Registration Statement on Form S-3 (the "Registration Statement") filed by the Company with the U.S. Securities and Exchange Commission (the "Commission") under the Securities Act of 1933, as amended (the "Securities Act"), on November 25, 2020, with respect to the resale of up to: (i) 2,245,400 shares (the "Common Shares") of Company common stock, par value \$0.01 per share (the "Common Stock"); (ii) 2,597,215 shares of Common Stock (the "Pre-Funded Warrant Shares") issuable upon exercise of pre-funded warrants to purchase shares of Common Stock (the "Pre-Funded Warrants"); and (iii) 4,842,615 shares of Common Stock (the "Common Warrant Shares," and together with the Pre-Funded Warrant Shares, the "Warrant Shares") issuable upon exercise of common stock purchase warrants (the "Common Warrants," and together with the Pre-Funded Warrants, the "Warrants") that were issued prior to the filing of the Registration Statement and may be sold from time to time by certain stockholders of the Company identified in the Registration Statement as a selling stockholder (the "Selling Stockholder"). The Common Shares and the Warrant Shares are collectively referred to herein as the "Securities." The Securities are to be sold by the Selling Stockholder from time to time on a delayed or continuous basis pursuant to Rule 415 under the Securities Act pursuant to a prospectus to be filed with the Registration Statement as may be supplemented by one or more prospectus supplement that may be filed under the Securities Act.

We have examined originals or copies (certified or otherwise identified to our satisfaction) of (i) the Amended and Restated Certificate of Incorporation of the Company together with all amendments thereto; (ii) the Certificate of Correction to the Amended and Restated Certificate of Incorporation; (iii) the Certificate of Designation of Preferences, Rights and Limitations of Series B Convertible Preferred Stock; (iv) the Amended and Restated Bylaws of the Company, as amended; (v) the Registration Statement and the exhibits thereto; (vi) the prospectus contained within the Registration Statement; (vii) the Securities Purchase Agreement, dated November 23, 2020, by and between the Company and the Selling Stockholder; (viii) the Warrants; (ix) such other corporate records, agreements, documents and instruments; and (x) such certificates or comparable documents of public officials and

other sources, believed by us to be reliable, and of officers and representatives of the Company, and have made such inquiries of such officers and representatives, as we have deemed relevant and necessary as a basis for the opinions hereinafter set forth.

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

Based upon the foregoing, and subject to the qualifications, assumptions and limitations set forth herein, we are of the opinion that (i) the Common Shares have been duly authorized and are validly issued, fully paid and non-assessable, and (ii) the Warrant Shares have been duly and validly authorized and reserved for issuance, and when issued upon the exercise of the applicable Warrants in accordance with the terms therein, will be validly issued, fully paid and non-assessable.

Our opinion is limited to the laws of the State of Delaware and the federal laws of the United States of America, and we express no opinion with respect to the laws of any other jurisdiction.

This opinion is limited to the matters expressly stated herein. No implied opinion may be inferred to extend this opinion beyond the matters expressly stated herein. No opinion is expressed herein with respect to the qualification of the Securities under the securities or blue sky laws of any state or any foreign jurisdiction. This opinion is given as of its date. We do not undertake to advise you or anyone else of any changes in the opinions expressed herein resulting from changes in law, changes in facts or any other matters that hereafter might occur or be brought to our attention.

We hereby consent to the filing of this opinion with the Commission as an exhibit to the Registration Statement in accordance with the requirements of Item 601(b)(5) of Regulation S-K promulgated under the Securities Act, and to the use of this firm's name therein and in the prospectus filed as part of the Registration Statement under the caption "Legal Matters." In giving this consent, we do not admit that we are within the category of persons whose consent is required by Section 7 of the Securities Act and the rules and regulations promulgated thereunder.

Very truly yours,

/s/ Ballard Spahr LLP

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement Form S-3 of OpGen, Inc. of our report, dated March 23, 2020, which includes an explanatory paragraph related to OpGen, Inc.'s ability to continue as a going concern, on our audits of the consolidated financial statements of OpGen, Inc. as of December 31, 2019 and 2018 and for the years then ended included in the Annual Report on Form 10-K of OpGen, Inc for the year ended December 31, 2019 also incorporated by reference in the Registration Statement. We also consent to the reference to our firm under the caption "Experts" in the Registration Statement.

/s/ CohnReznick LLP

Tysons, Virginia
November 25, 2020