

Up to \$11,500,000



OpGen, Inc. Common Stock

We have entered into a Sales Agreement, or the sales agreement, with Cowen and Company, LLC, or Cowen, relating to shares of our common stock offered by this prospectus supplement. In accordance with the terms of the sales agreement, we may offer and sell shares of our common stock having an aggregate offering price of up to \$11,500,000 from time to time through Cowen.

Our common stock is listed on the NASDAQ Capital Market under the symbol "OPGN." On September 12, 2016, the last reported sale price of our common stock on the NASDAQ Capital Market was \$1.69 per share.

As of September 12, 2016, the aggregate market value of our outstanding common stock held by non-affiliates was approximately \$35.1 million, based on 21,667,739 shares of outstanding common stock, of which 9,480,072 are held by non-affiliates, and a per share price of \$3.70, which was the closing sale price of our common stock on July 20, 2016. We have not offered any securities during the past twelve months pursuant to General Instruction I.B.6 of Form S-3.

Sales of our common stock, if any, under this prospectus supplement may be made in sales deemed to be "at the market offerings" as defined in Rule 415 promulgated under the Securities Act of 1933, as amended, or the Securities Act, including sales made directly on or through the NASDAQ Capital Market, the existing trading market for our common stock, sales made to or through a market maker other than on an exchange or otherwise, in negotiated transactions at market prices prevailing at the time of sale or at prices related to such prevailing market prices, and/or any other method permitted by law. Cowen is not required to sell any specific number or dollar amount of securities, but will act as a sales agent using commercially reasonable efforts consistent with its normal trading and sales practices, on mutually agreed terms between Cowen and us. There is no arrangement for funds to be received in any escrow, trust or similar arrangement.

The compensation to Cowen for sales of common stock sold pursuant to the sales agreement is equal to 3.0% of the gross proceeds of any shares of common stock sold under the sales agreement. In connection with the sale of the common stock on our behalf, Cowen will be deemed to be an "underwriter" within the meaning of the Securities Act, and the compensation of Cowen will be deemed to be underwriting commissions or discounts. We have also agreed to provide indemnification and contribution to Cowen with respect to certain liabilities, including liabilities under the Securities Act or the Securities Exchange Act of 1934, as amended, or the Exchange Act.

Investing in our common stock involves a high degree of risk. Please read the information contained in and incorporated by reference under the heading "Risk Factors" on page S-3 of this prospectus supplement, and under similar headings in the other documents that are filed after the date hereof and incorporated by reference into this prospectus supplement.

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

Cowen and Company

September 13, 2016

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PROSPECTUS

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You should rely only on the information contained in, or incorporated by reference into, this prospectus supplement. We have not, and Cowen has not, authorized any other person to provide you with different information. We are not, and Cowen is not, making an offer to sell or seeking an offer to buy common stock under this prospectus supplement in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus supplement, including the documents incorporated by reference into this prospectus supplement, is accurate only as of the date of those respective documents. Our business, financial condition, results of operations and prospects may have changed since those dates.

ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement and the accompanying prospectus, dated September 9, 2016, are part of a "shelf" registration statement on Form S-3 (File No. 333-213356). This document is in two parts. The first part is this prospectus supplement, which describes the terms of this offering of shares of our common stock 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, the accompanying prospectus, including the documents incorporated by reference, provides more general information, some of which may not apply to this offering. 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 in any document incorporated by reference that was filed with the Securities and Exchange Commission, or SEC, before the date of this prospectus supplement, on the other hand, you should rely on the information in this prospectus supplement. If any statement in one of these documents is inconsistent with a statement in another document having a later date the statement in the document having the later date modifies or supersedes the earlier statement.

You should rely only on the information contained in, or incorporated by reference into, this prospectus supplement and the accompanying prospectus. We have not, and the underwriters have not, authorized anyone to provide you with different or additional information. You should assume that the information in this prospectus supplement and the accompanying prospectus is accurate only as of the date on the front of the respective document and that any information that 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 supplement or the accompanying prospectus or the time of any sale of a security. Our business, financial condition, results of operations and prospects may have changed since those dates.

As used in this prospectus supplement, the terms "OpGen," the "company," "we," "us," and "ours" refer to OpGen, Inc.

This prospectus supplement, the accompanying prospectus and the information incorporated by reference herein and therein include trademarks, service marks and trade names owned by us or other companies. All trademarks, service marks and trade names included or incorporated by reference into this prospectus supplement or the accompanying prospectus are the property of their respective owners.

PROSPECTUS SUPPLEMENT SUMMARY

The following summary highlights information contained elsewhere in this prospectus supplement or incorporated by reference herein and does not contain all the information that may be important to purchasers of our common stock. For a more complete understanding of our company and this offering, we encourage you to read and consider carefully the more detailed information in this prospectus supplement and the information incorporated by reference into this prospectus supplement, including the information referred to under the heading "Risk Factors" in this prospectus supplement on page S-3 and in the documents incorporated by reference into this prospectus supplement.

OpGen, Inc.

Overview

OpGen is harnessing the power of informatics and genomic analysis to provide complete solutions for patient, hospital and network-wide infection prevention and treatment. OpGen is developing molecular information products and services to combat infectious disease in global healthcare settings, helping to guide clinicians with more rapid information about life-threatening infections, improve patient outcomes, and decrease the spread of infections caused by multi drug-resistant microorganisms, or MDROs. The company's proprietary DNA tests and bioinformatics address the rising threat of antibiotic resistance by helping physicians and healthcare providers optimize patient care decisions and protect the hospital biome through customized screening and surveillance solutions. The company's molecular information products and services combines Acuitas® DNA tests, Acuitas Lighthouse™ bioinformatics and clinical laboratory lab services, commonly referred to as CLIA lab services, for MDRO genetic identification, antibiotic resistance gene information and surveillance, and a proprietary data warehouse including genomic data matched with antibiotic susceptibility information for microbes and patient information from healthcare providers. The company is working to deliver its molecular information products and services to a global network of customers and partners. The Acuitas DNA tests provide rapid microbial identification and antibiotic resistance gene information. These include the QuickFISH® family of FDA-cleared and CE-marked diagnostic products used to rapidly detect pathogens in positive blood cultures, the MDRO Gene Test to detect, type, track, and trend antibiotic resistant organisms in real-time and a rapid antibiotic resistance test in development.

Company Information

We were incorporated under the laws of the State of Delaware in January 2001. Our principal executive office is located at 708 Quince Orchard Road, Suite 205, Gaithersburg, Maryland, 20878, and our telephone number is (240) 813-1260. Our website address is www.opgen.com. We do not incorporate the information on or accessible through our website into this prospectus supplement, and you should not consider any information on, or accessible through, our website as part of this prospectus supplement.

THE OFFERING

| | |
|------------------------------|--|
| Common Stock Offered By Us | Shares of our common stock having an aggregate offering price of up to \$11,500,000. |
| Manner of Offering | "At the market offering" that may be made from time to time through our sales agent, Cowen. See "Plan of Distribution" on page S-9. |
| Use of Proceeds | We currently intend to use the net proceeds from this offering primarily for research, development and manufacturing of product candidates, and for other general corporate purposes. See "Use of Proceeds" on page S-7 of this prospectus supplement. |
| Risk Factors | Investing in our common stock involves significant risks. Please read the information contained in and incorporated by reference under the heading "Risk Factors" on page S-3 of this prospectus supplement and under similar headings in the other documents that are filed after the date hereof and incorporated by reference into this prospectus supplement, together with the other information included in or incorporated by reference into this prospectus supplement, before deciding whether to invest in our common stock. |
| NASDAQ Capital Market Symbol | OPGN |

RISK FACTORS

Investing in our common stock involves a high degree of risk. Before deciding whether to invest in our common stock, you should consider carefully the risks and uncertainties described below and under the heading "Risk Factors" contained in our Quarterly Report on Form 10-Q for the period ended June 30, 2016, which are incorporated by reference into this prospectus supplement in their entirety, as updated or superseded by the risks and uncertainties described under similar headings in the other documents that are filed after the date hereof and incorporated by reference into this prospectus supplement, together with the other information in this prospectus supplement and the documents incorporated by reference. The risks described in these documents are not the only ones we face, but those that we consider to be material. There may be other unknown or unpredictable economic, business, competitive, regulatory or other factors that could have material adverse effects on our future results. Past financial performance may not be a reliable indicator of future performance, and historical trends should not be used to anticipate results or trends in future periods. If any of these risks actually occurs, our business, financial condition, results of operations or cash flow could be seriously harmed. This could cause the trading price of our common stock to decline, resulting in a loss of all or part of your investment. Please also read carefully the section below titled "Forward-Looking Statements."

Additional Risks Related to This Offering

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 the 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, 2016, was approximately \$5.6 million, or \$0.29 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.

Because the sales of the shares offered hereby will be made directly into the market or in negotiated transactions, the prices at which we sell these shares will vary and these variations may be significant. Purchasers of the shares we sell, as well as our existing stockholders, will experience significant dilution if we sell shares at prices significantly below the price at which they invested.

If you purchase shares of our common stock 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 may in the future offer and issue additional shares of our common stock or other securities convertible into or exchangeable for our common stock. 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 investors 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 due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans.

Directors, executive officers, principal stockholders and affiliated entities own a significant percentage of our capital stock, and they may make decisions that you do not consider to be in the best interests of our stockholders.

Our current officers, directors, their affiliated entities and affiliates collectively own approximately 65% of our outstanding common stock. As a result, if some or all of them acted together, they would have the ability to exert substantial influence over the election of our board of directors and the outcome of issues requiring approval by our stockholders. This concentration of ownership may also have the effect of delaying or preventing a change in control of the company that may be favored by other stockholders. This could prevent transactions in which stockholders might otherwise recover a premium for their shares over current market prices.

The market price 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 and could cause you to lose some or all of your investment in our common stock.

During the period from our initial public offering in May 2015 through August 31, 2016, the market price of our common stock fluctuated from a high of \$4.85 per share to a low of \$1.03 per share, and our stock price continues to fluctuate. The market price of our common stock may continue to fluctuate significantly in response to numerous factors, some of which are beyond our control, such as:

- our ability to grow our revenue and customer base;
- the announcement of new products or product enhancements by us or our competitors;
- 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;
- 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 science 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.

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, not only in terms of the number of shares that can be bought and sold at a given price, but also as it may be adversely affected by delays in the timing of transactions and reduction in security analysts' and the media's coverage of us, if at all. A significant number of our shares are held by officers, directors and beneficial owners of at least 10% of our outstanding shares, each of whom is subject to certain restrictions with regard to trading our common stock. 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, without a large public float, 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.

Sales by stockholders of substantial amounts of our shares of common stock, the issuance of new shares of common stock by us or the perception that these sales may occur in the future could materially and adversely affect the market price of our common stock, and you may lose all or a portion of your investment in our common stock.

FORWARD-LOOKING STATEMENTS

This prospectus supplement, including the documents that we incorporate by reference herein, contains forward-looking statements, including statements regarding our future financial condition, business strategy and plans and objectives of management for future operations. Forward-looking statements include all statements that are not historical facts.

In some cases you can identify these statements by forward-looking words such as "believe," "may," "will," "estimate," "continue," "anticipate," "intend," "could," "would," "project," "plan," "expect" or the negative or plural of these words or similar expressions. These forward-looking statements include, but are not limited to, statements concerning the following:

- the commercialization of our current products, including our QuickFISH and PNA FISH diagnostic tests and our Acuitas® MDRO test services and our Acuitas Lighthouse™ bioinformatics services;
- our liquidity and working capital requirements, including our cash requirements over the next 12 months and beyond, and our ability to continue as a going concern;
- 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 agreements;
- changes in laws or regulations applicable to our business, including potential regulation by the FDA;
- our ability to develop and commercialize new products and the timing of commercialization;
- integration of the operations of AdvanDx, Inc. acquired by merger on July 14, 2015;
- compliance with the U.S. and international regulations applicable to our business; and
- our expectations regarding future revenue and expenses.

These statements reflect our current views with respect to future events and are based on assumptions and are subject to risks and uncertainties. Given these uncertainties, you should not place undue reliance on these forward-looking statements. We discuss in greater detail, and incorporate by reference into this prospectus supplement and the accompanying prospectus in their entirety, many of these risks under the headings "Risk Factors" on page S-3 of this prospectus supplement and in our Quarterly Report on Form 10-Q for the period ended June 30, 2016, which is incorporated herein by reference, as may be updated or superseded by the risks and uncertainties described under similar headings in the other documents that are filed after the date hereof and incorporated by reference into this prospectus supplement and the accompanying prospectus. Also, these forward-looking statements represent our estimates and assumptions only as of the date of this prospectus supplement. Unless required by law, we undertake no obligation to update or revise any forward-looking statements to reflect new information or future events or developments. Thus, you should not assume that our silence over time means that actual events are bearing out as expressed or implied in such forward-looking statements. You should read this prospectus supplement and the accompanying prospectus and the documents we have filed with the SEC that are incorporated by reference with the understanding that our actual future results may be materially different from what we expect. We qualify all of the forward-looking statements in the foregoing documents by these cautionary statements.

USE OF PROCEEDS

We may issue and sell shares of our common stock having aggregate sales proceeds of up to \$11,500,000 from time to time. Because there is no minimum offering amount required as a condition to close this offering, the actual total public offering amount, commissions and proceeds to us, if any, are not determinable at this time.

We currently intend to use the net proceeds from this offering primarily for research, development and manufacturing of product candidates, and for other general corporate purposes. Pending these uses, we expect to invest the net proceeds in short-term, interest-bearing securities.

DILUTION

Our net tangible book value as of June 30, 2016 was approximately \$5.6 million, or \$0.29 per share. Net tangible book value per share is determined by dividing our total tangible assets, less total liabilities, by the number of shares of our common stock outstanding as of June 30, 2016. Dilution with respect to net tangible book value per share represents the difference between the amount per share paid by purchasers of shares of common stock in this offering and the net tangible book value per share of our common stock immediately after this offering.

After giving effect to the assumed sale of 6,804,733 shares of our common stock in this offering at an assumed offering price of \$1.69 per share, the last reported sale price of our common stock on the NASDAQ Capital Market on September 7, 2016, and after deducting estimated offering commissions and estimated offering expenses payable by us, our as adjusted net tangible book value as of June 30, 2016 would have been approximately \$16.6 million, or \$.63 per share. This represents an immediate increase in net tangible book value of \$.34 per share to existing stockholders and immediate dilution of \$1.06 per share to investors purchasing our common stock in this offering at the public offering price. The following table illustrates this dilution on a per share basis:

| | | | |
|---|----|-------------|-------------|
| Assumed public offering price per share | | \$ | 1.69 |
| Net tangible book value per share of as June 30, 2016 | \$ | 0.29 | |
| Increase in net tangible book value per share attributable to this offering | \$ | <u>0.34</u> | |
| As adjusted net tangible book value per share as of June 30, 2016, after giving effect to this offering | | \$ | <u>0.63</u> |
| Dilution per share to new investors purchasing our common stock in this offering | | \$ | <u>1.06</u> |

The shares subject to the sales agreement with Cowen are being sold from time to time at various prices. An increase of \$0.15 per share in the price at which the shares are sold from the assumed offering price of \$1.69 per share shown in the table above, assuming all of our common stock in the aggregate amount of \$11.5 million during the term of the sales agreement with Cowen is sold at that price, would increase our as adjusted net tangible book value per share after the offering to \$0.65 per share and would increase the dilution in net tangible book value per share to new investors in this offering to \$1.19 per share, after deducting commissions and estimated aggregate offering expenses payable by us. A decrease of \$0.15 per share in the price at which the shares are sold from the assumed offering price of \$1.69 per share shown in the table above, assuming all of our common stock in the aggregate amount of \$11.5 million during the term of the sales agreement with Cowen is sold at that price, would decrease our adjusted net tangible book value per share after the offering to \$0.62 per share and would decrease the dilution in net tangible book value per share to new investors in this offering to \$0.92 per share, after deducting commissions and estimated offering expenses payable by us. This information is supplied for illustrative purposes only and may differ based on the actual offering price and the actual number of shares offered.

The above discussion and table are based on 19,353,126 shares outstanding as of June 30, 2016, and exclude as of that date:

- 3,395,445 shares of common stock issuable upon the exercise of outstanding stock options having a weighted average exercise price of \$2.05 per share;
- 10,506,524 shares of common stock issuable upon the exercise of outstanding warrants having a weighted average exercise price of \$3.23 per share; and

To the extent that options or warrants outstanding as of June 30, 2016 have been or may be exercised or other shares issued, investors purchasing our common stock in this offering may experience further dilution. In addition, we may choose to raise additional capital due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our stockholders.

PLAN OF DISTRIBUTION

We have entered into a sales agreement with Cowen, under which we may issue and sell from time to time up to \$11,500,000 of our common stock through Cowen as our sales agent. Sales of our common stock, if any, will be made at market prices by any method that is deemed to be an "at the market offering" as defined in Rule 415 under the Securities Act, including sales made directly on the NASDAQ Capital Market or any other trading market for our common stock, or sales to or through a market maker other than on an exchange. If authorized by us in writing, Cowen may also sell our shares of common stock by any other method permitted by law, including negotiated transactions, and Cowen may also purchase shares of our common stock as principal.

Cowen will offer our common stock subject to the terms and conditions of the sales agreement on a daily basis or as otherwise agreed upon by us and Cowen. We will designate the maximum amount of common stock to be sold through Cowen on a daily basis or otherwise determine such maximum amount together with Cowen. Subject to the terms and conditions of the sales agreement, Cowen will use its commercially reasonable efforts to sell on our behalf all of the shares of common stock requested to be sold by us. We may instruct Cowen not to sell common stock if the sales cannot be effected at or above the price designated by us in any such instruction. Cowen or we may suspend the offering of our common stock being made through Cowen under the sales agreement upon proper notice to the other party. Cowen and we each have the right, by giving written notice as specified in the sales agreement, to terminate the sales agreement in each party's sole discretion at any time.

The aggregate compensation payable to Cowen as sales agent equals 3.0% of the gross sales price of the shares sold through it pursuant to the sales agreement. We have also agreed to reimburse Cowen up to \$50,000 of Cowen's actual outside legal expenses incurred by Cowen in connection with this offering, and for certain other expenses, including Cowen's FINRA counsel fees in an amount up to \$12,500. We estimate that the total expenses of the offering payable by us, excluding commissions payable to Cowen under the sales agreement, will be approximately \$167,500.

The remaining sales proceeds, after deducting any expenses payable by us and any transaction fees imposed by any governmental, regulatory, or self-regulatory organization in connection with the sales, will equal our net proceeds for the sale of such common stock.

Cowen will provide written confirmation to us following the close of trading on the NASDAQ Capital Market on each day in which common stock is sold through it as sales agent under the sales agreement. Each confirmation will include the number of shares of common stock sold through it as sales agent on that day, the volume weighted average price of the shares sold, the percentage of the daily trading volume and the net proceeds to us.

We will report at least quarterly the number of shares of common stock sold through Cowen under the sales agreement, the net proceeds to us and the compensation paid by us to Cowen in connection with the sales of common stock.

Settlement for sales of common stock will occur, unless the parties agree otherwise, on the third business day that is also a trading day following the date on which any sales were made in return for payment of the net proceeds to us. There is no arrangement for funds to be received in an escrow, trust or similar arrangement.

In connection with the sales of our common stock on our behalf, Cowen may be deemed to be an "underwriter" within the meaning of the Securities Act, and the compensation paid to Cowen may be deemed to be underwriting commissions or discounts. We have agreed in the sales agreement to provide indemnification and contribution to Cowen against certain liabilities, including liabilities under the Securities Act. As sales agent, Cowen will not engage in any transactions that stabilizes our common stock.

Our common stock is listed on the NASDAQ Capital Market and trades under the symbol "OPGN." The transfer agent for our common stock is Philadelphia Stock Transfer, Inc.

Cowen and/or its affiliates have provided, and may in the future provide, various investment banking and other financial services for us for which services they have received and, may in the future receive, customary fees.

LEGAL MATTERS

Ballard Spahr LLP, Philadelphia, Pennsylvania, has passed upon the validity of the common stock offered by this prospectus supplement. Duane Morris LLP, Newark, New Jersey, is counsel for Cowen in connection with this offering

EXPERTS

The consolidated financial statements of OpGen, Inc. as of December 31, 2015 and 2014 and for the years then ended, included in our Annual Report on Form 10-K for the year ended December 31, 2015, and incorporated by reference herein have been audited by CohnReznick LLP, independent registered public accounting firm, as set forth in their report, which includes an explanatory paragraph related to OpGen, Inc.'s ability to continue as a going concern, incorporated herein by reference, in reliance upon such report given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-3 under the Securities Act to register our securities being offered in this prospectus. This prospectus supplement and the accompanying prospectus, which constitute a part of the registration statement, do not contain all the information set forth in the registration statement or the exhibits and schedules filed thereto. For further information about us and our securities offered by this prospectus supplement and the accompanying prospectus, we refer you to the registration statement and the exhibits and schedules filed with the registration statement. Any statement contained in this prospectus supplement and the accompanying prospectus regarding the contents of any contract or any other document that is filed as an exhibit to the registration statement is not necessarily complete and each such statement is qualified in all respects by reference to the full text of such contract or other document filed as an exhibit to the registration statement. You may read and copy any materials we file with the SEC, including the registration statement, at the SEC's Public Reference Room at 100 F Street, NE, Washington, D.C. 20549, on official business days during the hours of 10:00 a.m. to 3:00 p.m. You may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC also maintains an Internet website that contains reports, proxy statements and other information about issuers, like us, that file electronically with the SEC. The address of that website is <http://www.sec.gov>. You may also inspect our SEC reports and other information at our website at www.opgen.com. Information on or accessible through our website is not a part of this prospectus. We are subject to the information reporting requirements of the Exchange Act, and file reports, proxy statements and other information with the SEC. These reports, proxy statements and other information are available for inspection and copying at the public reference room and website of the SEC referred to above.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" in this prospectus supplement and the accompanying 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 and the accompanying prospectus is part of a registration statement we filed with the SEC. You should rely on the information incorporated by reference in this prospectus supplement and the accompanying prospectus and the registration statement. The information incorporated by reference is considered to be part of this prospectus supplement and the accompanying 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 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, 2015, filed on March 30, 2016;
- the information specifically incorporated by reference into our Annual Report on Form 10-K for the year ended December 31, 2015 from our Definitive Proxy Statement on Schedule 14A, filed on April 29, 2016;
- our Quarterly Report on Form 10-Q for the quarter ended June 30, 2016, filed on August 11, 2016 and for the quarter ended March 31, 2016, filed on May 16, 2016; and
- our Current Report on Form 8-K/A (Item 5.02) filed on September 9, 2016; and our Current Reports on Form 8-K filed on September 2, 2016 (Item 5.02), June 24, 2016 (Items 5.02 and 5.07), June 6, 2016 (Items 5.03 and 9.01), May 20, 2016 (Items 1.01, 3.02, 5.03, and 9.01), May 17, 2016 (Items 1.01, 3.02 and 9.01), May 12, 2016 (Items 8.01 and 9.01), May 3, 2016 (Items 5.02 and 9.01), May 2, 2016 (Items 5.02 and 9.01); 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



\$50,000,000 Common Stock
185,250 shares of Common Stock Underlying Warrant

We may offer and sell from time to time, in one or more offerings, up to \$50,000,000 of our common stock.

Each time we sell common stock pursuant to this prospectus, we will provide the specific terms of the common stock offered in a supplement to this prospectus. The prospectus supplements will also describe the specific manner in which we will offer common stock 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 shares of common stock 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. If any dealers, agents or underwriters are involved in the sale of the common stock 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.

This prospectus also relates to the offer and sale, from time to time, of up to 185,250 shares of our common stock underlying a warrant held by the "selling stockholder" named on page 5 of this prospectus or in a prospectus supplement. The warrant is exercisable at an exercise price of \$6.60 per share and may be exercised until May 4, 2020.

The shares of common stock registered for the account of the selling stockholder may be sold from time to time by the selling stockholder directly or through one or more broker-dealers, in one or more transactions on the NASDAQ Capital Market, in the over-the-counter market, in negotiated transactions or otherwise, at prices related to the prevailing market prices or at negotiated prices, all as more fully described in the section entitled "Plan of Distribution" beginning on page 6 of this prospectus. We will not receive any proceeds from the sale of these shares of common stock offered by the selling stockholder. All costs and expenses incurred in connection with the registration under the Securities Act of 1933, as amended, or Securities Act, of the offering made hereby will be paid by us, other than any brokerage fees and commissions, fees and disbursements of legal counsel for the selling stockholder and stock transfer and other taxes attributable to the sale of the shares, which will be paid by the selling stockholder.

We are registering the offer and sale of these shares pursuant to certain registration rights granted to the selling stockholder. The registration of these shares of common stock does not necessarily mean that any of the shares will be offered or sold by the selling stockholder.

Our common stock is traded on the NASDAQ Capital Market under the symbol "OPGN." On August 25, 2016, the closing price of our common stock was \$1.70 per share.

We are an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012 and, as such, are subject to certain reduced public company reporting requirements.

Investing in our securities involves a high degree of risk. You should carefully review the risks and uncertainties referenced under the heading "RISK FACTORS" on page 4 in this prospectus and any applicable prospectus supplement and under similar headings in 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 September 9, 2016.

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 4 and our financial statements and the related notes incorporated by reference into this prospectus, before making an investment decision. In this prospectus, we refer to OpGen, Inc., a Delaware corporation, as "OpGen," the "Company," "we," "us" or "our."

Overview

OpGen is harnessing the power of informatics and genomic analysis to provide complete solutions for patient, hospital and network-wide infection prevention and treatment. OpGen is developing molecular information products and services to combat infectious disease in global healthcare settings, helping to guide clinicians with more rapid information about life threatening infections, improve patient outcomes, and decrease the spread of infections caused by multidrug-resistant microorganisms, or MDROs. The Company's proprietary DNA tests and bioinformatics address the rising threat of antibiotic resistance by helping physicians and healthcare providers optimize patient care decisions and protect the hospital biome through customized screening and surveillance solutions. The Company's molecular information products and services combines Acuitas[®] DNA tests, Acuitas Lighthouse[™] bioinformatics and CLIA lab services for MDRO genetic identification, antibiotic resistance gene information and surveillance, and a proprietary data warehouse including genomic data matched with antibiotic susceptibility information for microbes and patient information from healthcare providers. The Company is working to deliver its molecular information products and services to a global network of customers and partners. The Acuitas DNA tests provide rapid microbial identification and antibiotic resistance gene information. These include the QuickFISH[®] family of FDA-cleared and CE-marked diagnostic products used to rapidly detect pathogens in positive blood cultures, the MDRO Gene Test to detect, type, track, and trend antibiotic resistant organisms in real-time and a rapid antibiotic resistance test in development.

Company Information

We were incorporated under the laws of the State of Delaware in January 2001. Our principal executive office is located at 708 Quince Orchard Road, Suite 205, Gaithersburg, Maryland, 20878, and our telephone number is (240) 813-1260. 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 accessible through, our website as part of this prospectus.

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 shares of common stock in one or more offerings up to an aggregate maximum offering price of \$50,000,000. Additionally, the selling stockholder identified herein may offer and sell up to 185,250 shares of our common stock, underlying a warrant, in one or more offerings. The warrant is exercisable at an exercise price of \$6.60 per share and may be exercised until May 4, 2020. Each time we sell any of our common stock, we will provide a prospectus supplement that will contain more specific information about the offering and the terms of the common stock 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 More 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. 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.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and certain information incorporated herein by reference contain forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. All statements, other than statements of historical facts contained herein, including statements regarding our future results of operations and financial position, strategy and plans, and our expectations for future operations, are forward-looking statements. The words "believe," "may," "will," "estimate," "continue," "anticipate," "design," "intend," "expect" or the negative version of these words and similar expressions are intended to identify forward-looking statements.

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 referenced below 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 commercialization of our current products, including our QuickFISH® and PNA FISH diagnostic products for infectious diseases, our Acuitas® MDRO test services and our Acuitas Lighthouse™ bioinformatics services;
- our liquidity and working capital requirements, including our cash requirements over the next 12 months and beyond;
- 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 agreements;
- changes in laws or regulations applicable to our business, including potential regulation by the FDA;
- our ability to develop and commercialize new products and the timing of commercialization;
- integration of the operations of AdvanDx, Inc. acquired by merger on July 14, 2015;
- 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. Any forward-looking statement made by us in this prospectus speaks only as of the date on which it is made. We disclaim any duty to update any of these forward looking statements after the date of this prospectus to confirm these statements to actual results or revised expectations.

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 any accompanying prospectus supplement, before investing in our securities, you should carefully consider the risks described 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.

USE OF PROCEEDS

Unless otherwise indicated in the applicable prospectus supplement, we intend to use the net proceeds from the sale of common stock under this prospectus, together with our existing cash resources, for working capital and other general corporate purposes. We may also use a portion of the net proceeds that we receive to acquire or invest in complementary businesses, products, services, technologies, or other assets. At this time, we have not determined the specific uses of any offering proceeds, or the amounts we plan to spend on any particular use or the timing of such expenditures, which may vary significantly depending on various factors, such as our research and development activities, regulatory approvals, competition, marketing and sales, and the market acceptance of any products introduced by us or our partners. Pending application of the net proceeds from any particular offering, we intend to invest such proceeds in short-term, interest-bearing, investment-grade securities. We will not receive any proceeds from the sale of common stock by the selling stockholder.

Each time we issue common stock, 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 common stock covered by this prospectus.

SELLING STOCKHOLDER

On May 8, 2015, the selling stockholder acquired a warrant, or the Underwriter Warrant, to purchase 185,250 shares of our common stock as part of the consideration paid to the selling stockholder in its capacity as the underwriter of our initial public offering. The Underwriter Warrant is exercisable at an exercise price of \$6.60 per share and may be exercised until May 4, 2020.

The following table sets forth information as of August 15, 2016 and includes the number of shares of our common stock beneficially owned by the selling stockholder prior to the offering, the number of shares of common stock offered by the selling stockholder, and the number of shares of common stock that will be owned by the selling stockholder upon completion of the offering or offerings pursuant to this prospectus, assuming the selling stockholder sells all of the shares of common stock offered hereby. Only the selling stockholder listed below or its transferees, pledgees, donees, assignees, distributees, successors and others who later come to hold any of the selling stockholder's interest may offer and sell the common stock pursuant to this prospectus and any accompanying prospectus supplement. The selling stockholder may offer the shares listed on the table below for sale pursuant to this prospectus and any accompanying prospectus supplement from time to time. Accordingly, no estimate can be given as to the shares of common stock that the selling stockholder will hold upon consummation of any such sales. Beneficial ownership is determined in accordance with the rules of the SEC. There are no material relationships between the selling stockholder and us other than as disclosed below.

| Name of Selling Stockholder | Beneficial Ownership Prior to this Offering | | Shares Being Offered for Sale | Beneficial Ownership After this Offering | |
|-----------------------------|--|---------|-------------------------------------|---|---------|
| | Number | Percent | Number | Number | Percent |
| Maxim Partners LLC | 185,250 | *% | 185,250 | — | — |

* Hold less than one percent (1%).

PLAN OF DISTRIBUTION

Primary Offerings by the Company

We may sell shares of our common stock registered hereunder:

- through underwriters;
- through dealers;
- through agents;
- directly to purchasers; 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 common stock, 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 common stock through any of these methods or other methods described in the applicable prospectus supplement.

The distribution of the common stock 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 common stock and any applicable restrictions.

The prospectus supplement with respect to common stock 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 common stock 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 common stock, 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 common stock in respect of which the prospectus is delivered, we will sell such common stock 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 common stock 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 the common stock, any underwriters may engage in transactions that stabilize, maintain or otherwise affect the price of the common stock or any other securities the prices of which may be used to determine payments on such common stock. Specifically, any underwriters may overallocate 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 the common stock through a syndicate of underwriters, the underwriting syndicate may reclaim selling concessions allowed to an underwriter or a dealer for distributing the common stock in the offering if the syndicate repurchases previously distributed common stock in transactions to cover syndicate short positions, in stabilization transactions or otherwise. Any of these activities may stabilize or maintain the market price of the common stock 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 common stock covered by this prospectus and the applicable prospectus supplement, including in short sale transactions. If so, the third party may use common stock pledged by us or borrowed from us or others to settle those sales or to close out any related open borrowings of stock, and may use common stock received from us in settlement of those derivatives to close out any related open borrowings of stock. The third party in such sale transactions will be an underwriter and, if not identified in this prospectus, will be named in the applicable prospectus supplement (or a post-effective amendment). In addition, we may otherwise loan or pledge common stock to a financial institution or other third party that in turn may sell the common stock 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 common stock 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 common stock 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 common stock, as well as the expense of all commissions and discounts, if any, attributable to sales of the securities by us.

Offerings by the Selling Stockholder

The selling stockholder and any transferees, pledgees, donees, assignees, distributees or other successors in interest to a selling stockholder may, from time to time, sell, transfer or otherwise dispose of any or all of their shares of our common stock covered by this prospectus on the NASDAQ Capital Market or any other stock exchange, market or trading facility on which the shares are traded or in private transactions. These dispositions may be at fixed prices, at prevailing market prices at the time of sale, at prices related to the prevailing market price, at varying prices determined at the time of sale, or at negotiated prices. A selling stockholder may use any one or more of the following methods when disposing of shares:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- settlement of short sales entered into after the effective date of the registration statement of which this prospectus is a part;
- broker-dealers may agree with the selling stockholder to sell a specified number of such shares at a stipulated price per share;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- a combination of any such methods of sale; or
- any other method permitted pursuant to applicable law (including underwritten transactions).

The selling stockholder may also sell shares under Rule 144 under the Securities Act, if available, rather than under this prospectus.

Broker-dealers, underwriters and agents engaged by the selling stockholder may arrange for other brokers dealers, underwriters or agents to participate in sales. Broker-dealers, underwriters or agents may receive commissions, discounts or concessions from the selling stockholder (or, if any broker-dealer acts as agent for the purchaser of shares, from the purchaser) in amounts to be negotiated, but, except as set forth in a supplement to this prospectus, in the case of an agency transaction not in excess of a customary brokerage commission in compliance with FINRA rules.

In connection with the sale of the common stock or interests therein, the selling stockholder may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the common stock in the course of hedging the positions they assume. The selling stockholder may also sell shares of the common stock short and deliver these securities to close out their short positions, or loan or pledge the common stock to broker-dealers that in turn may sell these securities. The selling stockholder may also enter into option or other transactions with broker-dealers or other financial institutions or the creation of one (1) or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

The selling stockholder and any broker-dealers, underwriters or agents that are involved in selling the shares may be deemed to be "underwriters" within the meaning of the Securities Act in connection with such sales. In such event, any commissions received by such broker-dealers, underwriters or agents and any profit on the resale of the shares purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act.

All costs and expenses incurred in connection with the registration under the Securities Act of the offering made hereby will be paid by us, other than any brokerage fees and commissions, fees and disbursements of legal counsel for the selling stockholder and stock transfer and other taxes attributable to the sale of the shares, which will be paid by the selling stockholder.

Because selling stockholder may be deemed to be "underwriters" within the meaning of the Securities Act, they will be subject to the prospectus delivery requirements of the Securities Act including Rule 172 thereunder. In addition, any securities covered by this prospectus which qualify for sale pursuant to Rule 144 under the Securities Act may be sold under Rule 144 rather than under this prospectus.

To the extent required, the shares of our common stock to be sold; the names of the selling stockholder; the respective purchase prices and public offering prices; the names of any agents, dealers or underwriters; and any applicable commissions or discounts with respect to a particular offer will be set forth in an accompanying prospectus supplement or, if appropriate, a post-effective amendment to the registration statement that includes this prospectus. The resale shares will be sold only through registered or licensed brokers or dealers if required under applicable state securities laws. In addition, in certain states, the resale shares may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

Under applicable rules and regulations under the Exchange Act, any person engaged in the distribution of the resale shares may not simultaneously engage in market making activities with respect to the common stock for the applicable restricted period, as defined in Regulation M, prior to the commencement of the distribution. In addition, the selling stockholder will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including Regulation M, which may limit the timing of purchases and sales of shares of our common stock by the selling stockholder or any other person. We will make copies of this prospectus available to the selling stockholder and have informed them of the need to deliver a copy of this prospectus to each purchaser at or prior to the time of the sale (including by compliance with Rule 172 under the Securities Act).

DESCRIPTION OF CAPITAL STOCK

Our authorized capital stock consists of 200,000,000 shares of common stock, par value \$0.01 per share, and 10,000,000 shares of preferred stock, par value \$0.01 per share, of which 7,690,572 shares are available for issuance. The following is a summary of the rights of our common and preferred stock and some of the provisions of our amended and restated certificate of incorporation and amended and restated bylaws and the Delaware General Corporation Law. 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 amended and restated certificate of incorporation and our amended and restated bylaws, a copy of each of which has been incorporated as an exhibit to the registration statement of which this prospectus forms a part.

Common Stock

Of the authorized common stock, as of August 15, 2016, there were 21,667,739 shares outstanding. As of August 15, 2016, there were 14,182,950 shares of our common stock reserved for the exercise of outstanding stock options, warrants and restricted stock units. There were approximately 71 record holders as of August 15, 2016. 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. 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

Series A Convertible Preferred Stock

Of the authorized preferred stock, the Company issued 2,309,428 shares of Series A Convertible Preferred Stock. As of August 10, 2016, no shares of the Series A Convertible Preferred Stock were outstanding. The holder of the Series A Convertible Preferred Stock converted all 2,309,428 shares of Series A Convertible Preferred Stock into 2,309,428 shares of common stock. All such converted shares of Series A Convertible Preferred Stock were canceled and will not be reissued.

Additional Series of Preferred Stock

Our board of directors has the authority, without further action by our stockholders, to issue from time to time 7,690,572 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. We have no current plans to issue any additional shares of preferred stock.

Underwriter Warrant

On May 8, 2015, the selling stockholder acquired the Underwriter Warrant to purchase 185,250 shares of our common stock as part of the consideration paid to the selling stockholder in its capacity as the underwriter of our initial public offering. The Underwriter Warrant is exercisable at an exercise price of \$6.60 per share and may be exercised until May 4, 2020. The exercise price and the number of shares of common stock underlying the Underwriter Warrant will be adjusted to account for the subdivision or combination by the Company of outstanding shares of common stock. The Warrants may be exercised pursuant to a cashless exercise, but only if a registration statement covering the resale of the Warrant Shares that are the subject of an exercise notice is not available for the resale of such Warrant Shares.

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.

Undesignated Preferred Stock

Our board of directors has the authority, without further action by our stockholders, to issue from time to time 7,690,572 shares of preferred stock in one or more series. The existence of authorized but unissued shares of preferred stock may enable our board of directors to discourage an attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise. For example, if in the due exercise of its fiduciary obligations, our board of directors were to determine that a takeover proposal is not in the best interests of our stockholders, our board of directors could cause shares of preferred stock to be issued without stockholder approval in one or more private offerings or other transactions that might dilute the voting or other rights of the proposed acquirer or insurgent stockholder or stockholder group. In this regard, our certificate of incorporation grants our board of directors broad power to establish the rights and preferences of authorized and unissued shares of preferred stock. The issuance of shares of preferred stock could decrease the amount of earnings and assets available for distribution to holders of shares of common stock. The issuance may also adversely affect the rights and powers, including voting rights, of these holders and may have the effect of delaying, deterring or preventing a change in control of us.

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.

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.

Transfer Agent and Registrar

The transfer agent for our common stock is Philadelphia Stock Transfer, Inc.

Exchange Listing

The shares of our common stock are currently listed on the NASDAQ Capital Market under the symbol "OPGN."

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. as of December 31, 2015 and 2014 and for the years then ended, included in our Annual Report on Form 10-K for the year ended December 31, 2015, and incorporated by reference herein have been audited by CohnReznick LLP, independent registered public accounting firm, as set forth in their report, which includes an explanatory paragraph related to OpGen, Inc.'s ability to continue as a going concern, incorporated herein by reference, in reliance upon such report given on the authority of said firm as experts in auditing and accounting.

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 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, 2015, filed on March 30, 2016;
- the information specifically incorporated by reference into our Annual Report on Form 10-K for the year ended December 31, 2015 from our Definitive Proxy Statement on Schedule 14A, filed on April 29, 2016;
- our Quarterly Report on Form 10-Q for the quarter ended March 31, 2016, filed on May 16, 2016 and for the quarter ended June 30, 2016, filed on August 11, 2016;
- our Current Reports on Form 8-K filed on June 24, 2016 (Items 5.02 and 5.07), June 6, 2016 (Items 5.03 and 9.01), May 20, 2016 (Items 1.01, 3.02, 5.03, and 9.01), on May 17, 2016 (Items 1.01, 3.02 and 9.01), on May 12, 2016 (Items 8.01 and 9.01), on May 3, 2016 (Items 5.02 and 9.01), and on May 2, 2016 (Items 5.02 and 9.01); 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

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-3 under the Securities Act to register our securities being offered in this prospectus. This prospectus, which constitutes a part of the registration statement, does not contain all the information set forth in the registration statement or the exhibits and schedules filed thereto. For further information about us and our securities offered by this prospectus, we refer you to the registration statement and the exhibits and schedules filed with the registration statement. Any statement contained in this prospectus regarding the contents of any contract or any other document that is filed as an exhibit to the registration statement is not necessarily complete and each such statement is qualified in all respects by reference to the full text of such contract or other document filed as an exhibit to the registration statement. You may read and copy any materials we file with the SEC, including the registration statement, at the SEC's Public Reference Room at 100 F Street, NE, Washington, D.C. 20549, on official business days during the hours of 10:00 a.m. to 3:00 p.m. You may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC also maintains an Internet website that contains reports, proxy statements and other information about issuers, like us, that file electronically with the SEC. The address of that website is <http://www.sec.gov>. You may also inspect our SEC reports and other information at our website at www.opgen.com. Information on or accessible through our website is not a part of this prospectus. We are subject to the information reporting requirements of the Exchange Act, and file reports, proxy statements and other information with the SEC. These reports, proxy statements and other information are available for inspection and copying at the public reference room and website of the SEC referred to above.

Up to \$11,500,000



Common Stock

PROSPECTUS SUPPLEMENT

Cowen and Company

September 13, 2016
