

PROSPECTUS



6,744,128 shares of Common Stock
2,309,428 shares of Common Stock underlying Series A Convertible Preferred Stock
6,790,169 shares of Common Stock underlying Warrants

This prospectus relates to the offer and sale, from time to time, of up to 6,744,128 shares of our common stock, par value \$0.01 per share; 2,309,428 shares of our common stock underlying Series A Convertible Preferred Stock and 6,790,169 shares of our common stock underlying Warrants held by the selling stockholders named on page 5 of this prospectus or in a prospectus supplement.

The shares of common stock registered for the account of the selling stockholders may be sold from time to time by the selling stockholders 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 8 of this prospectus. We will not receive any proceeds from the sale of these shares of common stock offered by the selling stockholders. 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 and stock transfer and other taxes attributable to the sale of the shares, which will be paid by the selling stockholders.

We are registering the offer and sale of these shares pursuant to certain registration rights granted to the selling stockholders. 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 stockholders. The timing and amount of any sale is within the sole discretion of each selling stockholder.

Our common stock is traded on the NASDAQ Capital Market under the symbol "OPGN." On July 19, 2016, the closing price of our common stock was \$1.57 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. See "[RISK FACTORS](#)" on page 4.

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 July 20, 2016.

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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, and the selling stockholders have not, authorized anyone to provide you with any different information. The selling stockholders are offering to sell our securities, and seeking offers to buy, only in jurisdictions where offers and sales are permitted.

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 a precision medicine company using molecular diagnostics and informatics to combat infectious disease. OpGen is developing molecular information solutions 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. 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 solution 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 ID, 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.

Recent Events

PIPE Financing

On May 12, 2016, we entered into a securities purchase agreement, or the Purchase Agreement, with the selling stockholders, pursuant to which we agreed to issue and sell an aggregate of 9,053,556 units, or the Units, at a purchase price of \$1.14375 per Unit, for an aggregate purchase price of approximately \$10.4 million, or the PIPE Financing. Each Unit to be sold pursuant to the Purchase Agreement was to consist of one share of the Company's common stock, par value \$0.01 per share, or the Common Stock, and one warrant to acquire 0.75 of one share of Common Stock, or the Warrants. On May 18, 2016, we entered into an amended and restated securities purchase agreement, or the A&R Purchase Agreement, with the selling stockholders which amended the Purchase Agreement to provide for the purchase, at the election of each selling stockholder, of Units consisting of (i) either (A) one share of Common Stock, or (B) one share of non-voting, convertible preferred stock par value \$0.01 per share, or the Series A Convertible Preferred Stock, and (ii) one Warrant to acquire 0.75 of one share of Common Stock. The A&R Purchase Agreement did not amend the purchase price per Unit, the number of Units sold or any other material term of the Purchase Agreement. Each share of Series A Convertible Preferred Stock will initially be convertible into one share of Common Stock, subject to certain beneficial ownership limitations. The Warrants offered in the transaction will be exercisable at an exercise price of \$1.3125 per share of Common Stock, will become exercisable 90 days after the date of issuance, and may be exercised for five years.

The A&R Purchase Agreement provided for the sale of an aggregate of 9,053,556 Units in two closings. The number of Units sold at each closing and the purchase price per Unit were fixed at the time the Company entered into the Purchase Agreement. 6,319,129 Units were sold to the selling stockholders (including Merck Global Health Innovation Fund, LLC, or MGHIF), in the first closing on May 19, 2016. In addition, on the date of the first closing, MGHIF deposited into an escrow account the aggregate purchase price payable for the remaining 2,734,427 Units to be purchased in the second closing. The second closing was subject to certain conditions, including the receipt of stockholder approval because the issuance of Common Stock to MGHIF in the second closing constituted a "change of control" under the Nasdaq Stock Market Listing Rules. None of the conditions to be satisfied by the Company for the second closing was within the control of MGHIF.

On May 11, 2016, we obtained stockholder approval of the PIPE Financing by written consent in lieu of a meeting. Because we obtained stockholder approval of the PIPE Financing by written consent in lieu of a meeting, we were required to mail a definitive information statement to our stockholders and wait 20 calendar days after the mailing before the stockholder approval of the PIPE Financing would become effective and we could proceed with the second closing. We mailed the definitive information statement to our stockholders and filed the definitive information statement with the SEC on June 6, 2016. Following completion of the 20 calendar day waiting period, the second closing occurred on June 27, 2016.

Pursuant to the A&R Purchase Agreement, the Company issued to the selling stockholders an aggregate of 6,744,128 Units including Common Stock; 2,309,428 Units including Series A Convertible Preferred Stock and Warrants exercisable for an aggregate of 6,790,169 shares of Common Stock.

The offering was made solely to accredited investors (as defined in Rule 501(a) under the Securities Act of 1933, as amended, or the Securities Act) in reliance upon the exemption from registration in Section 4(a)(2) of the Securities Act and Rule 506 of Regulation D.

For the complete terms of the A&R Purchase Agreement, the Series A Convertible Preferred Stock and the Warrants, you should refer to the Current Reports on Form 8-K filed with the SEC on May 17, 2016 and on May 20, 2016, which are incorporated herein by reference.

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 resale registration statement that we filed with the U.S. Securities and Exchange Commission, or SEC. By using a resale registration statement, the selling stockholders identified herein may, from time to time, offer and sell up to 6,744,128 shares of our common stock, 2,309,428 shares of our common stock underlying Series A Convertible Preferred Stock and 6,790,169 shares of our common stock underlying Warrants in one or more offerings. We will not receive any of the proceeds from the sales of the common stock by the selling stockholders. We may add, update or change in a 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 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.”**

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 and the selling stockholders have not authorized anyone to provide you with any different information. The selling stockholders are offering to sell our securities, and seeking offers to buy, only in jurisdictions where offers and sales are permitted.

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. In this prospectus, we refer to OpGen, Inc. as the “Company,” “we,” “our” or “us.” 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 Related to this Offering” set forth below and 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.

Risks Related to this Offering

Sales of substantial amounts of our common stock in the public markets, or the perception that they might occur, could reduce the price that our common stock might otherwise attain and may dilute your voting power and your ownership interest in us.

Sales of a substantial number of shares of our common stock in the public market after this offering, including any shares of common stock issued upon conversion of the Series A Convertible Preferred Stock or exercise of the Warrants, or the perception that these sales could occur, could adversely affect the market price of our common stock and may make it more difficult for you to sell your common stock at a time and price that you deem appropriate. Such sales may also impair our ability to raise capital through the sale of additional equity securities in the future at a time and price that our management deems acceptable. Additionally, the conversion of the Series A Convertible Preferred Stock or exercise of the Warrants may result in dilution of the ownership of our existing stockholders. Such dilution could also cause the market price of our common stock to decline.

USE OF PROCEEDS

We are registering the shares of common stock for resale by the selling stockholders. We will not receive any proceeds from the sale of common stock by the selling stockholders. However, upon any exercise of the Warrants for cash, the selling stockholder would pay us an exercise price of \$1.3125 per share of common stock, subject to any adjustment pursuant to the terms of the Warrants, or an aggregate of \$8.9 million if the Warrants are exercised in full for cash. We currently intend to use the proceeds from any such warrant exercise for working capital and general corporate purposes. Under certain conditions set forth in the Warrants, the Warrants are exercisable on a cashless basis by cashless exchange. If the Warrant is exercised on a cashless basis, we would not receive any cash payment from the selling stockholder upon any such exercise of the Warrant.

SELLING STOCKHOLDERS

As described in the prospectus summary, the selling stockholders acquired shares of our common stock, shares of our non-voting, convertible preferred stock that are convertible into shares of our common stock, and warrants that are exercisable for shares of our common stock in the PIPE Financing pursuant to the A&R Purchase Agreement. Under the A&R Purchase Agreement, we provided certain mandatory resale registration rights and piggyback registration rights to the selling stockholders in respect of the shares of common stock acquired in the PIPE Financing, including the shares of common stock issuable upon the conversion of the non-voting, convertible preferred stock and the exercise of the warrants. We are registering these shares for resale as provided under the A&R Purchase Agreement.

The following table sets forth information as of June 30, 2016, and includes the shares of our common stock beneficially owned by each of the selling stockholders, the shares of common stock registered for sale and offered for sale by each of the selling stockholders, and the shares of common stock that will be owned by each of the selling stockholders upon sale of the shares registered for resale, assuming that each selling stockholder has exercised its Warrants in full pursuant to a cash exercise and converted all of its Series A Convertible Preferred Stock to common stock and sells all such shares and all other shares of common stock acquired in the PIPE Financing. The percentage of shares owned is based on 19,353,124 shares of common stock outstanding as of June 30, 2016. Only those selling stockholders listed below or their eligible transferees, pledgees, donees, assignees, distributees or successors may offer and sell the common stock pursuant to this prospectus and any accompanying prospectus supplement. The selling stockholders may offer the shares listed in 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 stockholders 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 stockholders and us, other than as disclosed below.

Name of Selling Stockholder	Beneficial Ownership including the PIPE Financing Shares		Shares Being Offered for Sale	Beneficial Ownership After Sales	
	Number	Percent		Number	Percent
jVen Capital, LLC (1)	4,988,963	24.29	1,530,055	3,458,908	16.84
Merck Global Health Innovation Fund, LLC (2)	8,364,270	37.50	6,885,248	1,479,022	6.63
Sabby Management, LLC (3)	1,968,550	9.99	6,885,249	0	*
Timothy J.R. Harris, Ph.D., D.Sc. (4)	108,836	*	76,503	32,333	*
Kevin Krenitsky, M.D. (5)	212,254	1.09	76,503	135,751	*
Timothy C. Dec (6)	120,228	*	76,503	43,725	*
Robert McG. Lilley (7)	372,545	1.92	214,209	158,336	*
Albert J. Risdorfer (8)	76,503	*	76,503	0	*
Vadim Sapiro (9)	70,245	*	22,952	47,293	*

* Holds less than one percent (1%).

- (1) Evan Jones is the Chief Executive Officer and Chairman of the Board of Directors of OpGen, Inc. He is also the managing member of jVen Capital, LLC and has voting and investment authority over the shares owned by that entity. The shares beneficially owned consist of (i) 3,805,604 shares of common stock and (ii) warrants to acquire 1,183,359 shares of common stock that are currently exercisable or that will become exercisable within 60 days.
- (2) The shares beneficially owned consist of (i) 5,413,449 shares of common stock and (ii) warrants to acquire 2,950,821 shares of common stock that were acquired in the PIPE Financing and will become exercisable 90 days after purchase. Dr. David M. Rubin, Ph.D., a director of the Company, is managing director of, but does not have or share voting power over the shares of our common stock owned by Merck Global Health Innovation Fund, LLC. Merck Global Health Innovation Fund, LLC is our largest stockholder.
- (3) The shares beneficially owned consist of (i) 1,311,476 and 313,524 shares of common stock beneficially owned by Sabby Volatility Warrant Master Fund, Ltd., or SVWMF, and Sabby Healthcare Master Fund, Ltd., or SMHF, respectively. In addition, SMHF also holds 2,309,428 shares of Series A Convertible Preferred Stock. In accordance with Exchange Act Rule 13d-3, the shares of common stock beneficially owned by SMHF also include 343,550 shares of the Series A Convertible Preferred Stock, which are convertible for the next 60 days into an additional 343,550 shares of common stock. The shares being offered for sale by SMHF include the foregoing shares of common stock and also the shares of common stock underlying the remaining 1,965,878 shares of Series A Convertible Preferred Stock purchased in the PIPE Financing and held by SMHF, but that are not convertible into shares of common stock to the extent that, after giving effect to the conversion, SMHF, together with its affiliates, would own in excess of 9.99% of the outstanding voting stock of the Company, which limitation is subject to reduction at the election of the holder. The shares of common stock underlying the Warrants held by SVWMF and SMHF to acquire 983,607 and 1,967,214 shares of common stock, respectively, are also included in the shares being offered for sale, but such Warrants are not exercisable to the extent that, after giving effect to such exercise, the warrant holder, together with its affiliates, would beneficially own in excess of 4.99% of the number of shares of common stock outstanding immediately after giving effect to such exercise. Sabby Management, LLC serves as the investment manager for SVWMF and SMHF, and Hal Mintz is the manager of Sabby Management, LLC. Each of Sabby Management, LLC and Hal Mintz disclaim beneficial ownership over the shares held by SVWMF and SMHF, except to the extent of any pecuniary interest therein. All of the shares offered for sale were purchased in, or underlie securities purchased in, the PIPE Financing.
- (4) Timothy J.R. Harris is a director of the Company. The shares beneficially owned consist of (i) 50,116 shares of common stock, (ii) warrants to acquire 39,187 shares of common stock that are currently exercisable or that will become exercisable within 60 days, and (iii) stock options to purchase 19,533 shares of common stock that are currently vested or that will become vested within 60 days.

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- (5) Kevin Krenitsky is the President of the Company. The shares beneficially owned consist of (i) 52,050 shares of common stock, (ii) warrants to acquire 41,121 shares of common stock that are currently exercisable or that will become exercisable within 60 days, and (iii) stock options to purchase 119,083 shares of common stock that will become vested within 60 days.
- (6) Timothy C. Dec is the Chief Financial Officer of the Company. The shares beneficially owned consist of (i) 47,716 shares of common stock, (ii) warrants to acquire 36,787 shares of common stock that are currently exercisable or that will become exercisable within 60 days, and (iii) stock options to purchase 35,725 shares of common stock that are currently vested or that will become vested within 60 days.
- (7) Robert McG. Lilley is the Chief Commercial Officer of the Company. The shares beneficially owned consist of (i) 122,405 shares of common stock, (ii) warrants to acquire 91,804 shares of common stock that are currently exercisable or that will become exercisable within 60 days, and (iii) stock options to purchase 158,336 shares of common stock that are currently vested or that will become vested within 60 days. Shares of common stock and warrants acquired in the PIPE Financing are held of record by the Robert McG. Lilley Trust of which Mr. Lilley is the sole trustee.
- (8) Albert J. Risdorfer is the Senior Director of Human Resources of the Company. The shares beneficially owned consist of (i) 43,716 shares of common stock and (ii) warrants to acquire 32,787 shares of common stock that are currently exercisable or that will become exercisable within 60 days.
- (9) Vadim Sapiro is the Chief Information Officer of the Company. The shares beneficially owned consist of (i) 13,115 shares of common stock, (ii) warrants to acquire an additional 9,837 shares of common stock that are currently exercisable or that will become exercisable within 60 days, and (iii) stock options to purchase 47,293 shares of common stock that are currently vested or that will become vested within 60 days. Shares of common stock and warrants acquired in the PIPE Financing are held jointly by Mr. Sapiro and his spouse.

PLAN OF DISTRIBUTION

The selling stockholders may, from time to time, sell any or all of their shares of common stock on any stock exchange, market or trading facility on which the shares are traded or in private transactions. These sales may be at fixed or negotiated prices. The selling stockholders may use any one or more of the following methods when selling 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;
- short sales;
- broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

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

Broker-dealers engaged by the selling stockholders may arrange for other brokers-dealers to participate in sales. Broker-dealers may receive commissions or discounts from the selling stockholders (or, if any broker-dealer acts as agent for the purchaser of shares, from the purchaser) in amounts to be negotiated. The selling stockholders do not expect these commissions and discounts to exceed what is customary in the types of transactions involved. Any profits on the resale of shares of common stock by a broker-dealer acting as principal might be deemed to be underwriting discounts or commissions under the Securities Act. Discounts, concessions, commissions and similar selling expenses, if any, attributable to the sale of shares will be borne by a selling stockholder. The selling stockholders may agree to indemnify any agent, dealer or broker-dealer that participates in transactions involving sales of the shares if liabilities are imposed on that person under the Securities Act.

The selling stockholders may from time to time pledge or grant a security interest in some or all of the shares of common stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of common stock from time to time under this prospectus after we have filed a supplement to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act supplementing or amending the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus.

The selling stockholders also may transfer the shares of common stock in other circumstances, in which case the transferees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus and may sell the shares of common stock from time to time under this prospectus after we have filed a supplement to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act supplementing or amending the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus.

The selling stockholders and any broker-dealers or agents that are involved in selling the shares of common stock 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 or agents and any profit on the resale of the shares of common stock purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act.

We are required to pay all fees and expenses incident to the registration of the shares of common stock. We have agreed to indemnify the selling stockholders against certain losses, claims, damages and liabilities, including liabilities under the Securities Act.

We have agreed to keep this registration statement effective until the earlier of the date that all of the shares of common stock covered by this registration statement have been sold or can be sold publicly without restriction or limitation under Rule 144 under the Securities Act.

The selling stockholders have advised us that they have not entered into any agreements, understandings or arrangements with any underwriters or broker-dealers regarding the sale of their shares of common stock, nor is there an underwriter or coordinating broker acting in connection with a proposed sale of shares of common stock by any selling stockholder. If we are notified by any selling stockholder that any material arrangement has been entered into with a broker-dealer for the sale of shares of common stock, if required, we will file a supplement to this prospectus. If the selling stockholders use this prospectus for any sale of the shares of common stock, they will be subject to the prospectus delivery requirements of the Securities Act.

The anti-manipulation rules of Regulation M under the Exchange Act may apply to sales of our common stock and activities of the selling stockholders.

There can be no assurance that the selling stockholders will sell any or all of the shares of common stock we registered their behalf pursuant to the registration statement of which this prospectus forms a part.

Once sold under the registration statement of which this prospectus forms a part, the shares of common stock will be freely tradable in the hands of persons other than our affiliates.

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. The following is a summary of the rights of our common and preferred stock, Warrants purchased in the PIPE Financing, 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 June 30, 2016, there were 19,353,124 shares outstanding. As of June 30, 2016, there were 14,182,950 shares of our common stock reserved for the exercise of outstanding stock options, warrants and restricted stock units and 2,309,428 shares of our common stock reserved for the conversion of outstanding shares of non-voting, convertible preferred stock. There were approximately 76 record holders as of June 30, 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, as of June 30, 2016, there are 2,309,428 shares of the Series A Convertible Preferred Stock outstanding. There was one holder of Series A Convertible Preferred Stock as of June 30, 2016. Each share of Series A Convertible Preferred Stock has a stated value equal to \$1.14375 and a conversion price equal to \$1.14375, subject to adjustment upon the occurrence of certain events, including stock splits, stock dividends and fundamental transactions. As a result, shares of the Series A Convertible Preferred Stock are initially convertible into shares of common stock on a one-for-one basis. The Series A Convertible Preferred Stock is not convertible into shares of common stock to the extent that, after giving effect to the conversion, the holder of such stock, together with such holder's affiliates, would own in excess of 9.99% of the outstanding voting stock of the Company, which limitation is subject to reduction at the election of the holder. Shares of Series A Convertible Preferred Stock converted into common stock or redeemed shall be canceled and shall not be reissued.

Except as required by law, and except with respect to such actions that may alter or change adversely the powers, preferences or rights of the Series A Convertible Preferred Stock, such stock has no voting rights, and it ranks on par with the common stock as to dividend rights and distributions of assets upon the liquidation, dissolution or winding up of the Company. Except with respect to stock dividends or distributions for which adjustments are made to the conversion price, holders of Series A Convertible Preferred Stock will be entitled to receive dividends on shares of Series A Convertible Preferred Stock equal (on an as-if converted basis) to and in the same form as dividends actually paid on shares of common stock. No other dividends are payable on shares of Series A Convertible Preferred Stock.

In the event the Company does not timely deliver shares of common stock to the holder upon conversion of the Series A Convertible Preferred Stock, the Company is required to pay liquidated damages and compensation for Buy-In, as defined below. Specifically, in addition to the holder's other available remedies, if the Company fails to deliver to a holder such shares on the second trading day after the share delivery date applicable to such conversion, the Company shall pay to such holder, in cash, as liquidated damages and not as a penalty, for each \$5,000 of stated value of Series A Convertible Preferred Stock being converted, \$50 per trading day (increasing to \$100 per trading day on the third trading day and increasing to \$200 per trading day on the sixth trading day after such damages begin to accrue) for each trading day after such second trading day after the share delivery date until such shares are delivered or holder rescinds such conversion. If after such share delivery date such holder is required by its brokerage firm to purchase (in an open market transaction or otherwise), or the holder's brokerage firm otherwise purchases, shares of common stock to deliver in satisfaction of a sale by such holder of the shares which such holder was entitled to receive upon the conversion relating to such share delivery date, or a Buy-In, then the Company shall (A) pay in cash to such holder (in addition to any other remedies available to or elected by such holder) the amount, if any, by which (x) such holder's total purchase price (including any brokerage commissions) for the common stock so purchased exceeds (y) the product of (1) the aggregate number of shares of common stock that such holder was entitled to receive from the conversion at issue multiplied by (2) the actual sale price at which the sell order giving rise to such purchase obligation was executed (including any brokerage commissions) and (B) at the option of such holder, either reissue (if surrendered) the shares of Series A Convertible Preferred Stock equal to the number of shares of Series A Convertible Preferred Stock submitted for conversion (in which case, such conversion shall be deemed rescinded) or deliver to such holder the number of shares of common stock that would have been issued if the Company had timely complied with its delivery requirements.

Additional Series of Preferred Stock

Our board of directors has the authority, without further action by our stockholders, to issue from time to time an additional 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.

PIPE Warrants

Pursuant to the terms of the A&R Purchase Agreement, the selling stockholders purchased 9,053,556 warrants, or the PIPE Warrants, exercisable for an aggregate of 6,790,169 shares of common stock, or the Warrant Shares, in the PIPE Financing. The PIPE Warrants are exercisable at an exercise price of \$1.3125 per share of common stock, are exercisable 90 days after the date of issuance, and may be exercised for five years. The exercise price and the number of Warrant Shares will be adjusted to account for the subdivision or combination by the Company of outstanding shares of common stock. The exercise price may, at any time, also be voluntarily reduced at the discretion of the board of directors of the Company. 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.

The PIPE Warrants also contain certain provisions providing for liquidated damages to be paid by the Company in the event the Company does not timely deliver registered shares of common stock to the holder upon exercise of the PIPE Warrant. Specifically, in addition to the PIPE Warrant holder's other available remedies, if the Company fails to issue and deliver (or cause to be delivered) to a holder by the required delivery date a certificate representing the shares so delivered to the Company by such holder that is free from all restrictive and other legends, the Company shall pay to a holder in cash, as partial liquidated damages and not as a penalty, an amount equal to 1% of the product of (A) the aggregate number of shares of common stock not issued to the holder on a timely basis and to which the holder is entitled and (B) the closing sale price on the trading day immediately preceding the required delivery date of the certificate, per trading day for each trading day after such required delivery date until such securities are delivered to the holder. In addition, if the Company fails to (i) issue and deliver (or cause to be delivered) to a holder by the required delivery date a certificate representing the shares so delivered to the Company by such holder that is free from all restrictive and other legends or (ii) if after the required delivery date such holder purchases (in an open market transaction or otherwise) shares of common stock to deliver in satisfaction of a sale by such holder of all or any portion of the number of shares of common stock, or a sale of a number of shares of common stock equal to all or any portion of the number of shares of common stock that such holder anticipated receiving from the Company without any restrictive legend, then, the Company shall either (y) pay cash to the holder in an amount equal to the holder's total purchase price (including brokerage commissions and other out-of-pocket expenses, if any) for the shares of Common Stock so purchased, or the Buy-In Price, at which point the Company's obligation to deliver such shares shall terminate, or (z) promptly honor its obligation to deliver to the holder a certificate or certificates representing such shares and pay cash to the holder in an amount equal to the excess (if any) of the Buy-In Price over the product of (1) such number of shares of common stock that the Company was required to deliver multiplied by (2) the lowest closing sale price of the common stock on any trading day during the period commencing on the date of the delivery by such holder to the Company of the applicable shares (as the case may be) and ending on the date of such delivery and payment under this clause (z).

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 an additional 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;
- 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.

