

The information in this preliminary prospectus supplement is not complete and may be changed. A registration statement related to these securities has been declared effective by the Securities and Exchange Commission. This preliminary prospectus supplement and the accompanying base prospectus are not an offer to sell these securities and are not the solicitation of an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

Subject to completion, dated October 17, 2018

PROSPECTUS SUPPLEMENT
(To Prospectus dated September 9, 2016)

Filed Pursuant to Rule 424(b)(3)
Registration No. 333-213356

Shares



Common Stock

We are offering _____ shares of our common stock pursuant to this prospectus supplement and the accompanying prospectus. Our shares of common stock are traded on the Nasdaq Capital Market under the symbol OPGN. On October 16, 2018, the last reported sale price of our common stock was \$1.86 per share.

This offering is being made under a shelf registration statement declared effective by the Securities and Exchange Commission on September 9, 2016. Under the shelf registration statement, OpGen has the capacity to issue up to \$50 million of its common stock. To date, OpGen has been offering, under the shelf registration statement, up to \$11,500,000 of its common stock, from time to time, in an at-the-market, or ATM, offering with Cowen and Company LLC as its agent. To date, OpGen has raised \$9,424,682 under the ATM offering. On October 16, 2018, OpGen terminated the ATM offering, leaving \$2,075,318 unsold under such terminated ATM offering.

As a smaller reporting company with an aggregate market value of our outstanding common stock held by non-affiliates, or public float, below \$75,000,000, pursuant to General Instruction I.B.6 of Form S-3, OpGen is limited in the amount we can offer for sale and raise under the offering contemplated in this prospectus supplement to one-third of our public float, after subtracting any sales made under our shelf registration statement in the twelve months immediately preceding the date of this prospectus supplement. OpGen has a public float of \$14,218,364 as of September 24, 2018, and has raised \$1,040,863 under the ATM offering in the twelve months immediately preceding the date of this prospectus supplement. OpGen calculated its public float as of September 24, 2018, based on the average of the bid and asked prices of our common stock as of such date of \$2.445 per share. Based on General Instruction I.B.6 of Form S-3, in no event will we sell securities registered on the registration statement of which this prospectus supplement is a part in excess of \$3,698,592.

We are an “emerging growth company” as the term is used in the Jumpstart Our Business Startups Act of 2012 and, as such, we have elected to comply with certain reduced public company reporting requirements for this prospectus supplement and future filings. See “Prospectus Supplement Summary - Implications of Being an Emerging Growth Company.”

Investing in our common stock involves a high degree of risk. See “Risk Factors” beginning on page S-4 of this prospectus supplement, on page 4 of the accompanying prospectus and the risk factors described in the documents incorporated by reference into this prospectus supplement and the accompanying prospectus for more information.

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

	<u>Per Share</u>	<u>Total</u>
Public Offering Price ⁽¹⁾		
Underwriting Discount		
Proceeds, before expenses, to us		

(1) In addition to the underwriting discount, we have agreed to reimburse the underwriter for certain expenses. See “Underwriting” for additional disclosure regarding underwriter compensation.

We have granted the underwriter an option for a period of 45 days from the date of this prospectus supplement to purchase up to an additional _____ shares of our common stock (equal to 15% of the number of shares offered hereby) on the same terms and conditions as set forth above to cover over-allotments, if any. See “Underwriting” for more information.

The underwriter expects to deliver the shares to the purchasers on or about October _____, 2018, subject to customary closing conditions.

Aegis Capital Corp.

Prospectus Supplement dated October _____, 2018

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We have not, and the underwriter has not, authorized anyone to provide you with information different than that which is contained in or incorporated by reference in this prospectus supplement, the accompanying prospectus and in any free writing prospectus that we have authorized for use in connection with this offering. We are not, and the underwriter is not, making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus supplement, the accompanying prospectus, the documents incorporated by reference in this prospectus supplement and the accompanying prospectus, and in any free writing prospectus that we have authorized for use in connection with this offering, 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. You should read this prospectus supplement, the accompanying prospectus, the documents incorporated by reference in this prospectus supplement and the accompanying prospectus, and any free writing prospectus that we have authorized for use in connection with this offering, in their entirety before making an investment decision. You should also read and consider the information in the documents to which we have referred you in the sections of this prospectus supplement and the accompanying prospectus titled “Where You Can Find More Information” and “Incorporation of Certain Documents by Reference.”

This prospectus supplement includes statistical and other industry and market data that we obtained from industry publications and research, surveys and studies conducted by third parties. Industry publications and third-party research, surveys and studies generally indicate that their information has been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information. While we believe that these industry publications and third-party research, surveys and studies are reliable, we have not independently verified such data and we do not make any representation as to the accuracy of the information.

ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement and the accompanying prospectus are part of a registration statement that we filed with the U.S. Securities and Exchange Commission, or the SEC, using a “shelf” registration process on Form S-3 (File No. 333-213356), and that was declared effective by the SEC on September 9, 2016. This prospectus supplement describes the specific details regarding this offering, including the price, the amount of our common stock being offered, certain risks of investing in our common stock and other items. You should read this entire prospectus supplement, as well as the accompanying prospectus, together with the additional information described under the headings “Incorporation of Certain Documents by Reference” and “Where You Can Find More Information” carefully before making an investment decision. 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 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, for example, a document incorporated by reference in the accompanying prospectus, the statement in the document having the later date modifies or supersedes the earlier statement. You should assume that the information contained in this prospectus supplement is accurate as of the date on the front cover of this prospectus supplement only and that any information we have incorporated by reference or included in the accompanying prospectus is accurate only as of the date given in the document incorporated by reference or as of the date of the prospectus, as applicable, regardless of the time of delivery of this prospectus supplement or the accompanying prospectus or any sale of our common stock. Our business, financial condition, liquidity, results of operations and prospects may have changed since that date.

All references to “we,” “us,” “our,” the “company” and “OpGen” mean OpGen, Inc., including its subsidiaries, except where it is clear that the term refers only to OpGen, Inc.

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

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

PROSPECTUS SUMMARY

This summary highlights information contained in greater detail elsewhere in this prospectus supplement or incorporated by reference herein. This summary is not complete and does not contain all of the information you should consider in making your investment decision. You should read the entire prospectus supplement carefully before making an investment in our common stock. You should carefully consider, among other things, our financial statements and the related notes and the sections entitled “Risk Factors” included elsewhere in this prospectus supplement.

Overview

OpGen, Inc. was incorporated in Delaware in 2001. References in this report to the “Company” include OpGen and its wholly-owned subsidiaries. The Company’s headquarters and its principal operations are in Gaithersburg, Maryland. The Company also has operations in Copenhagen, Denmark, and Bogota, Colombia. The Company operates in one business segment.

OpGen is a precision medicine company using molecular diagnostics and informatics to help combat infectious disease. The Company is developing molecular information products and services for global healthcare settings, helping to guide clinicians with more rapid and actionable information about life threatening infections, improve patient outcomes, and decrease the spread of infections caused by multidrug-resistant microorganisms, or MDROs. Its proprietary DNA tests and informatics address the rising threat of antibiotic resistance by helping physicians and other healthcare providers optimize care decisions for patients with acute infections.

The Company’s molecular diagnostics and informatics offerings combine its Acuitas DNA tests and Acuitas Lighthouse informatics platform for use with its proprietary, curated MDRO knowledgebase. The Company is working to deliver its products and services, some in development, to a global network of customers and partners. These include:

- Its Acuitas DNA tests provide rapid microbial identification and antibiotic resistance gene information. These products include its Acuitas antimicrobial resistance, or AMR, Gene Panel u5.47 for complicated urinary tract infections in development as a clinical diagnostic test and available for Research Use Only, or RUO, its QuickFISH and PNA FISH FDA-cleared and CE-marked diagnostics used to rapidly detect pathogens in positive blood cultures, and its Acuitas Resistome Tests for genetic analysis of hospital surveillance isolates.
- Its Acuitas Lighthouse informatics systems, which are cloud-based HIPAA compliant informatics offerings that combine clinical lab test results with patient and hospital information to provide analytics and actionable insights to help manage MDROs in the hospital and patient care environment. Components of the Company’s informatics systems include the Acuitas Lighthouse Knowledgebase and the Acuitas Lighthouse Software. The Acuitas Lighthouse Knowledgebase is a relational database management system and a proprietary data warehouse of genomic data matched with antibiotic susceptibility information for bacterial pathogens. The Acuitas Lighthouse Software system includes the Acuitas Lighthouse Portal, a suite of web applications and dashboards, the Acuitas Lighthouse Prediction Engine, which is a data analysis software, and other supporting software components. The Acuitas Lighthouse Software can be customized and made specific to a healthcare facility or collaborator, such as a pharmaceutical company.

The Company’s operations are subject to certain risks and uncertainties. The risks include rapid technology changes, the need to manage growth, the need to retain key personnel, the need to protect intellectual property and the need to raise additional capital financing on terms acceptable to the Company. The Company’s success depends, in part, on its ability to develop and commercialize its proprietary technology as well as raise additional capital.

Recent Developments

Business and Preliminary Financial Results for Third Quarter

On October 15, 2018, OpGen, Inc. issued a press release communicating business updates and announcing preliminary financial results for the quarter ended September 30, 2018. OpGen continues to make commercial progress with our Acuitas AMR Gene Panel and the Acuitas Lighthouse Software RUO products. During the third quarter of 2018, we were selected to participate in an antimicrobial resistance surveillance initiative across New York State. As part of the collaboration, OpGen will receive a \$1.5 million contract for the 12-month demonstration portion of the project, with the potential for full implementation during the next four years, should certain milestones be achieved by all parties involved. The demonstration project revenue includes Acuitas AMR Gene Panel u5.47 (RUO) revenue and use of the Acuitas Lighthouse Software. Revenue is expected to be recognized during 2019. During the third quarter of 2018, the Company sold its first Acuitas AMR Gene Panel u5.47 RUO tests. Ten AMR Gene Panel RUO systems are in use in the field with both current customers as well as prospective customers evaluating the products for potential commercial use.

Total preliminary unaudited revenue for the third quarter of 2018 was approximately \$550,000 compared with approximately \$750,000 in the third quarter of 2017. The decrease was due to a decline in revenue from the Company's legacy QuickFISH rapid diagnostic testing products. In the third quarter of 2018 we anticipated a fourth payment under the CDC smartphone-based clinical decision support solutions contract; this payment is now expected in the fourth quarter of 2018. Total preliminary unaudited revenue for the first nine months of 2018 was approximately \$2.2 million, compared with approximately \$2.2 million for the first nine months of 2017. Cash as of September 30, 2018 was approximately \$4.7 million.

Retention Plan and Change of Control Agreement

On September 24, 2018, the Company entered into an Executive Change In Control and Severance Benefits Agreement with Evan Jones, its Chief Executive Officer, and amended its Executive Change In Control and Severance Benefits Agreement, with each of Timothy C. Dec, its Chief Financial Officer, and Vadim Sapiro, its Chief Information Officer.

On September 21, 2018, our Board of Directors approved a Retention Plan for Executives. The Company considers the establishment and maintenance of a sound and vital management team to be essential to protecting and enhancing the best interests of the Company and its stockholders. In this connection, we recognize that, as is the case with many publicly held corporations, the possibility of a change in control may arise and that such possibility, and the uncertainty and questions which it may raise among management, may result in the departure or distraction of management personnel to detriment of the Company and its stockholders. Accordingly, the Board has determined that appropriate steps should be taken to reinforce and encourage the continued attention and dedication of members of the Company's management to their assigned duties without distraction in circumstances arising from the possibility of a change in control of the Company. The executive officers of the Company, as that term is defined under the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder, are the eligible participants in the Retention Plan.

Company and Other Information

OpGen, Inc. was incorporated in Delaware in 2001. On July 14, 2015, the Company acquired AdvanDx, Inc., a Delaware corporation, as a wholly owned subsidiary in a merger transaction, or the AdvanDx Merger. The Company's headquarters are in Gaithersburg, Maryland, and its principal operations are in Gaithersburg, Maryland and Woburn, Massachusetts. The Company also has operations in Copenhagen, Denmark. Our principal executive office is located at 708 Quince Orchard Road, 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 that can be accessed through, our website as part of this prospectus supplement.

THE OFFERING

The following summary contains general information about this offering. The summary is not intended to be complete. You should read the full text and more specific details contained elsewhere in this prospectus supplement and the accompanying prospectus.

Common Stock

Common stock offered by us: shares of common stock.

Option to purchase additional shares: We have granted the underwriters an over-allotment option for a period of forty-five (45)-days to purchase up to 15% of the number of shares offered hereby to cover over-allotments, if any, of the shares offered by this prospectus supplement.

Common stock outstanding before this offering: 6,067,039 shares of common stock

Common stock outstanding after this offering: shares of common stock

Use of Proceeds: We estimate that we will receive net proceeds from this offering of approximately \$, or approximately \$ million if the underwriter exercises its option to purchase additional shares of common stock in full, in each case after deducting underwriting discounts and our estimated offering expenses.

We will use the net proceeds of this offering for general corporate purposes, including to advance clinical work toward submitting 510(k) applications to FDA. See "Use of Proceeds" on page S-7 of this prospectus supplement.

Risk Factors: Investing in our securities involves a high degree of risk. See "Risk Factors" beginning on page S-4 of this prospectus supplement and the other information included or incorporated by reference herein.

Nasdaq Capital Market symbol: OPGN

The number of shares of common stock to be outstanding immediately after this offering is based on 6,067,039 shares of our common stock outstanding as of June 30, 2018, and excludes:

- 219,233 shares of common stock issuable upon the exercise of outstanding options granted as of the date of this prospectus supplement, under our equity incentive plans at a weighted average exercise price of \$20.34 per share;
- 3,525,797 shares of common stock issuable upon the exercise of outstanding warrants, issued as of the date of this prospectus supplement, at a weighted average exercise price of \$14.84 per share;
- 43,658 shares of common stock available for future issuance under our equity incentive plans;
- 144,238 shares of Common Stock issued to Merck Global Health Innovation Fund on July 31, 2018 under our Allonge to Second Amended and Restated Senior Secured Promissory Note, dated June 11, 2018; and
- 214,193 shares of common stock issued under our at-the-market offering since June 30, 2018.

Unless otherwise stated, all information in this prospectus supplement is adjusted retroactively to reflect the 25:1 reverse share split effected on January 17, 2018.

RISK FACTORS

Investing in our securities involves a high degree of risk. You should consider carefully the risks and uncertainties described below, together with all of the other information in this prospectus supplement, including our financial statements and related notes included elsewhere in this prospectus supplement, before making an investment decision. If any of the following risks occur, our business, financial condition, results of operations and prospects could be materially and adversely affected. In that event, the trading price of our common stock could decline and you could lose part or all of your investment.

Risks Related to Our Business

We have a history of losses, and we expect to incur losses for the next several years. The report of our independent registered public accounting firm on our financial statements for the years ended December 31, 2017 and 2016 contains explanatory language that substantial doubt exists about our ability to continue as a going concern.

We have incurred substantial losses since our inception, and we expect to continue to incur additional losses for the next several years. For the six months ended June 30, 2018 and 2017, we had net losses of \$6.4 million and \$9.2 million, respectively. From our inception through June 30, 2018, we had an accumulated deficit of \$155.1 million. The report of our independent registered public accounting firm on our financial statements for the years ended December 31, 2017 and 2016 contains explanatory language that substantial doubt exists about our ability to continue as a going concern. We completed a number of financings in 2018 and 2017, including the February 2018 Public Offering, the July 2017 Public Offering, and an at-the-market, or ATM, public offering commenced in September 2016. The net proceeds from such financings were approximately \$23.9 million, as of September 30, 2018.

We expect to continue to incur significant operating expenses relating to, among other things:

- developing our Acuitas AMR Gene Panel products and services for antibiotic resistance testing, and our automated rapid molecular diagnostic products;
- commercializing our rapid pathogen identification and Acuitas MDRO and Acuitas Lighthouse informatics services;
- developing, presenting and publishing additional clinical and economic utility data intended to increase clinician adoption of our current and future products and services;
- expansion of our operating capabilities;
- development of collaborative arrangements;
- maintenance, expansion and protection of our intellectual property portfolio and trade secrets;
- future clinical trials as we seek regulatory approval for some of our product offerings;
- expansion of the size and geographic reach of our sales force and our marketing capabilities to commercialize potential future products and services; and
- continued focus on recruiting and retaining our quality assurance and compliance personnel and activities.

Even if we achieve significant revenues, we may not become profitable, and even if we achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to become and remain consistently profitable could adversely affect the market price of our common stock and could significantly impair our ability to raise capital, expand our business or continue to pursue our growth strategy. We believe that current cash on hand will be sufficient to fund operations into the first quarter of 2019. In the event we are unable to successfully raise additional capital during or before the first quarter of 2019, we will not have sufficient cash flows and liquidity to finance our business operations as currently contemplated. Accordingly, in such circumstances we would be compelled to reduce general and administrative expenses and delay research and development projects, including the purchase of scientific equipment and supplies, until we are able to obtain sufficient financing. We have no committed sources of capital and may find it difficult to raise money on terms favorable to us or at all. The failure to obtain sufficient capital to support our operations would have an adverse effect on our business, financial condition and results of operations.

We expect to make significant additional investment in the future related to our diagnostic products and services, which investments will require additional financing transactions through the issuance of equity or debt. If we are unable to make such investments our business will suffer.

We anticipate that we will need to make significant investments in our Acuitas AMR Gene Panel tests in development, Acuitas MDRO tests and Acuitas Lighthouse bioinformatics services in order to make our business profitable. We have identified potential synergies for future rapid diagnostic test developments based on our existing product and service offerings, but need to expend significant investments to develop such products and services. There can be no assurance that we can obtain sufficient resources or capital from operations or future financings to support these development activities.

To meet our capital needs, we are considering multiple alternatives, including, but not limited to, additional equity financings, debt financings and other funding transactions, licensing and/or partnering arrangements and business combination transactions. We believe that additional equity financings are the most likely source of capital. There can be no assurance that we will be able to complete any such financing transaction on acceptable terms or otherwise.

We believe that current cash on hand will be sufficient to fund operations into the first quarter of 2019. In the event we are unable to successfully raise additional capital during or before the first quarter of 2019, we will not have sufficient cash flows and liquidity to finance our business operations as currently contemplated. Accordingly, in such circumstances we would be compelled to immediately reduce general and administrative expenses and delay research and development projects, including the purchase of scientific equipment and supplies, until we are able to obtain sufficient financing. If such sufficient financing is not received timely, we would then need to pursue a plan to license or sell assets, seek to be acquired by another entity, cease operations and/or seek bankruptcy protection.

Risks Related to Our Common Stock and this Offering

Sales of substantial amounts of our common stock in the public market could depress the market price of our common stock.

Our common stock is listed for trading on the Nasdaq Capital Market. If our stockholders sell substantial amounts of our common stock in the public market, including the shares of common stock issuable upon the exercise of our warrants and stock options, or the market perceives that such sales may occur, the market price of our common stock could fall and we may be unable to sell our common stock in the future.

In the past the Company has failed to meet the minimum bid price and stockholders' equity requirements for continued listing on the Nasdaq Capital Market. The Company has regained its compliance with those continued listing requirements. If the Company does not remain in compliance with those continued listing requirements, Nasdaq could delist the common stock from the Nasdaq Capital Market.

During 2017, we received notices from the Listing Qualifications Staff of the Nasdaq Stock Market LLC, or Nasdaq, notifying us that we no longer met the requirement to maintain a minimum closing bid price of \$1.00 per share, as set forth in Nasdaq Listing Rule 5550(a)(2) and failed to meet The Nasdaq Capital Market's minimum stockholders' equity requirement of \$2,500,000 to be relisted. As a result, the Staff commenced delisting proceeding on January 2, 2018. We were able to achieve compliance with the minimum bid price as a result of the reverse stock split, and compliance with the minimum stockholders' equity component following the February 2018 Public Offering. If we do not remain in compliance with those continued listing requirements in the future, Nasdaq could delist the common stock from the Nasdaq Capital Market, which would have a material impact on our ability to raise funds in the future, and would make it more difficult for investors to trade shares of our common stock.

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. Currently, approximately 7% of our common stock, on a fully diluted basis, is held by officers, directors and their affiliates, each of whom is subject to certain restrictions with regard to trading our common stock. This ownership 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, following the reverse stock split, 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.

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 from this offering. Investors in this offering and 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 profitability or market value.

You may experience future dilution as a result of future equity offerings.

In order to raise additional capital, we may in the future offer 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 shares or 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.

The offering price determined for this offering is not an indication of our value.

The offering price of our common stock offered by this prospectus supplement and the accompanying prospectus may not necessarily bear any relationship to the book value of our assets, past operations, cash flows, losses, financial condition or any other established criteria for value. You should not consider the offering price as an indication of the value of the common stock. After the date of this prospectus supplement, the common stock may trade at prices above or below those prices.

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

We have never paid dividends on any of our capital stock and currently intend to retain any future earnings to fund the growth of our business. In addition, an amended and restated promissory note issued in June 2017 to MGHIF, and the related security agreement restricts our ability to pay cash dividends on our common stock. We may also enter into credit agreements or other borrowing arrangements in the future that will restrict our ability to declare or pay cash dividends on our common stock. Any determination to pay dividends in the future will be at the discretion of our Board of Directors and will depend on our financial condition, operating results, capital requirements, general business conditions and other factors that our Board of Directors may deem relevant. As a result, capital appreciation, if any, of our common stock will be the sole source of gain for the foreseeable future.

INFORMATION REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement includes forward-looking statements. All statements other than statements of historical facts contained in this prospectus supplement, 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 described in “Risk Factors”. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this prospectus supplement 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 completion of our development efforts for the AMR Gene Panel for patients at risk for cUTI and Acuitas Lighthouse Software, and the timing of commercialization;
- our ability to sustain or grow our customer base for our current products;
- our liquidity and working capital requirements, including our cash requirements over the next 12 months;
- our ability to maintain compliance with the ongoing listing requirements for the Nasdaq Capital Market;
- anticipated trends and challenges in our business and the competition that we face;
- the execution of our business plan and our growth strategy;
- our expectations regarding the size of and growth in potential markets;
- our opportunity to successfully enter into new collaborative or strategic agreements;
- regulations and changes in laws or regulations applicable to our business, including regulation by the FDA;
- compliance with the U.S. and international regulations applicable to our business; and
- our expectations regarding future revenue and expenses.

Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, level of activity, performance or achievements. In addition, neither we nor any other person assumes responsibility for the accuracy and completeness of any of these forward-looking statements. These risks should not be construed as exhaustive and should be read in conjunction with our other disclosures, including but not limited to the risk factors described in this prospectus supplement. 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 supplement 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.

These factors should not be construed as exhaustive and should be read in conjunction with our other disclosures, including but not limited to the risk factors described in this prospectus supplement. 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 supplement 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.

USE OF PROCEEDS

We will have broad discretion in the use of the net proceeds from the sale of the shares offered under this prospectus supplement. We intend to use the net proceeds from the sale of the shares for working capital and general corporate purposes.

DILUTION

Our net tangible book value as of June 30, 2018 was approximately \$4,578 thousand, or \$0.75 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, 2018. 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 sale of _____ shares of common stock in this offering at a public offering price of \$ _____ per share, and after deducting estimated placement agent's fees and estimated offering expenses payable by us, our as adjusted net tangible book value as of June 30, 2018 would have been approximately \$ _____ million, or \$ _____ per share. This represents an immediate increase in net tangible book value of \$ _____ per share to existing stockholders and immediate dilution of \$ _____ per share to investors purchasing our securities in this offering at the public offering price. The following table illustrates this dilution on a per share basis:

Public offering price per share of common stock		\$
Net tangible book value per share of as June 30, 2018	\$	
Increase in net tangible book value per share attributable to this offering	\$	
As adjusted net tangible book value per share as of June 30, 2018, after giving effect to this offering		\$
Dilution per share to new investors purchasing our common stock in this offering		\$

The above discussion and table are based on 6,067,039 shares of our common stock outstanding as of June 30, 2018, and excludes:

- 219,233 shares of common stock issuable upon the exercise of outstanding options granted as of the date of this prospectus supplement, under our equity incentive plans at a weighted average exercise price of \$20.34 per share;
- 3,525,797 shares of common stock issuable upon the exercise of outstanding warrants, issued as of the date of this prospectus supplement, at a weighted average exercise price of \$14.84 per share;
- 43,658 shares of common stock available for future issuance under our equity incentive plans;
- 144,238 shares of Common Stock issued to Merck Global Health Innovation Fund on July 31, 2018 under our Allonge to Second Amended and Restated Senior Secured Promissory Note, dated June 11, 2018; and
- 214,193 shares of common stock issued under our at-the-market offering since June 30, 2018.

DESCRIPTION OF CAPITAL STOCK

Our authorized capital stock consists of 50,000,000 shares of common stock, par value \$0.01 per share, and 10,000,000 shares of preferred stock, par value \$0.01 per share, 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 the common warrants offered hereby, 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 supplement forms a part.

Following receipt of approval from stockholders at a special meeting held on January 17, 2018, on January 17, 2018, we filed an Amendment to our Amended and Restated Certificate of Incorporation to effect a reverse stock split of the issued and outstanding shares of our common stock, at a ratio of one share for each twenty-five shares outstanding, and to reduce the authorized shares of common stock from 200,000,000 to 50,000,000 shares.

On June 20, 2017, we received a notice from the Listing Qualifications Staff of the Nasdaq Stock Market LLC, or Nasdaq, notifying us that, based upon the closing bid price of our common stock for the last 30 consecutive business days, we no longer met the requirement to maintain a minimum closing bid price of \$1.00 per share, as set forth in Nasdaq Listing Rule 5550(a)(2). In accordance with Nasdaq Listing Rule 5810(c)(3)(A), we had a period of 180 calendar days to regain compliance with the rule. On December 21, 2017, the Company received written notification, or the December Notice, from the Listing Qualifications Staff of Nasdaq, or the Staff, indicating that, based upon (i) the Company's continued non-compliance with the minimum bid price rule and (ii) the Company's inability to meet The Nasdaq Capital Market initial listing requirements, specifically maintaining a minimum of stockholders' equity, the Staff had determined that the Company was not eligible for an additional 180 day extension to meet the minimum bid price rule.

In implementing the Reverse Stock Split, the number of shares of our common stock held by each stockholder was reduced by dividing the number of shares held immediately before the Reverse Stock Split by twenty-five and then rounding down to the nearest whole share. We will pay cash to each stockholder in lieu of any fractional interest in a share to which each stockholder would otherwise be entitled as a result of the Reverse Stock Split. The Reverse Stock Split does not affect any stockholder's percentage ownership interest in our Company or proportionate voting power, except to the extent that interests in fractional shares are paid in cash.

In addition, we have adjusted all outstanding shares of any restricted stock units, stock options and warrants entitling the holders to purchase shares of our common stock as a result of the Reverse Stock Split, as required by the terms of these securities. In particular, we have reduced the conversion ratio for each security, and increased the exercise price in accordance with the terms of each security based on Reverse Stock Split ratio (i.e., the number of shares issuable under such securities have been divided by twenty-five, and the exercise price per share has been multiplied by twenty-five). Also, we reduced the number of shares reserved for issuance under our existing 2015 Equity Incentive Plan, or the 2015 Plan, proportionately based on the Reverse Stock Split ratio. The Reverse Stock Split does not otherwise affect any of the rights currently accruing to holders of our common stock, or options or warrants exercisable for our common stock.

Common Stock

Of the authorized common stock, as of September 30, 2018, there were 6,425,470 shares outstanding. As of September 30, 2018, there were 3,745,030 shares of our common stock reserved for the exercise of outstanding stock options, warrants and restricted stock units. There were approximately 33 record holders as of September 30, 2018. 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 92,377 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.

Outstanding Warrants

IPO Warrants

The warrants to purchase common stock that we issued in our initial public offering, or the IPO Warrants, entitle the registered holder to purchase one share of common stock at a price equal to \$165.00 per share, subject to adjustment as discussed below, immediately following the issuance of such IPO Warrants and terminate at 5:00 p.m., New York City time, on May 8, 2020 or earlier upon the dissolution or winding up of the Company. We have listed the IPO Warrants on the Nasdaq Capital Market, as a standalone security under the symbol "OPGNW."

The IPO Warrants were issued pursuant to a Warrant Agreement between us and our transfer agent as the Warrant Agent. The exercise price and number of shares of common stock issuable upon exercise of the IPO Warrants may be adjusted in certain circumstances, including in the event of a stock dividend or recapitalization, reorganization, merger or consolidation.

The IPO Warrants may be exercised upon surrender of the applicable Warrant Certificate on or prior to the applicable expiration date at the offices of the Warrant Agent, with the exercise form on the reverse side of the Warrant Certificate completed and executed as indicated, accompanied by full payment of the exercise price, by certified or official bank check payable to us, unless such holders are willing to exercise their IPO Warrants on a cashless basis, as further described in this Warrant Agreement, for the number of IPO Warrants being exercised. Under the terms of the Warrant Agreement, we have agreed to use our reasonable best efforts to maintain the effectiveness of a registration statement and prospectus supplement relating to common stock issuable upon exercise of the IPO Warrants until the expiration of the IPO Warrants. The Offered Warrant holders do not have the rights or privileges of holders of common stock or any voting rights until they exercise their IPO Warrants and receive shares of common stock. After the issuance of shares of common stock upon exercise of the IPO Warrants, each holder will be entitled to one vote for each share held of record on all matters to be voted on by stockholders.

A holder may not exercise any portion of an Offered Warrant to the extent that the holder, together with its affiliates and any other person or entity acting as a group, would own more than 4.99% of the outstanding common stock after exercise, as such percentage ownership is determined in accordance with the terms of the Offered Warrant. The foregoing limitation on exercise shall not apply to any registered holder of an Offered Warrant who, together with his, her or its affiliates, and any persons acting as a group together with such registered holder and such registered holder's affiliates, owns in excess of 4.99% immediately prior to the closing of this offering. In addition, upon at least 61 days' prior notice from the holder to us, the holder may waive such limitation.

No fractional shares of common stock will be issued upon exercise of the IPO Warrants. If, upon exercise of the Offered Warrant, a holder would be entitled to receive a fractional interest in a share, we will, upon exercise, round to the nearest whole number of shares of common stock to be issued to the Offered Warrant holder. If multiple IPO Warrants are exercised by the holder at the same time, we will aggregate the number of whole shares issuable upon exercise of all the IPO Warrants.

2016 PIPE Warrants

Pursuant to the terms of the Amended & Restated Purchase Agreement, dated as of May 18, 2016, by and among the Company and the purchasers party thereto, the purchasers purchased 362,142 warrants, or the PIPE Warrants, exercisable for an aggregate of 271,606 shares of common stock, or the PIPE Warrant Shares, in the PIPE Financing. The PIPE Warrants are exercisable at an exercise price of \$32.8125 per share of common stock, became exercisable 90 days after the date of issuance, and may be exercised for five years from the date of issuance. The exercise price and the number of PIPE 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 PIPE Warrants may be exercised pursuant to a cashless exercise, but only if a registration statement covering the resale of the PIPE Warrant Shares that are the subject of an exercise notice is not available for the resale of such PIPE 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 a 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).

Warrants issued in Bridge Financing

Pursuant to the Note Purchase Agreement and the underlying transactions, the Company has issued warrants to purchase shares of its common stock to jVen Capital in an amount equal to twenty percent (20%) of the principal of each of the two bridge financing notes issued, or the jVen Capital Warrants, and warrants to purchase shares of its common stock to MGHIF in an amount equal to twenty percent (20%) of the outstanding principal and accrued interest under the amended and restated MGHIF Note on June 28, 2017, the date of issuance. The warrants each have a five year term from issuance, are first exercisable on the date that is six months after the date of issuance and have an exercise price equal to 110% of the closing price of the Company's common stock on the date immediately prior to the date of issuance. The terms of the warrants issued in connection with the Bridge Financing (other than the exercise price and the number of shares) may be amended, in the discretion of the holder, to reflect the terms of the warrants issued in the July 2017 Public Offering.

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

Warrants issued in the July 2017 Public Offering

The Company issued three types of warrants in connection with the July 2017 Public Offering. The common warrants issued in the July 2017 Public Offering entitle the registered holder to purchase one twenty-fifth of a share of common stock at an exercise price of \$10.625 per share. The pre-funded warrants issued in the July 2017 Public Offering entitle the registered holders to purchase one twenty-fifth of a share of common stock for an exercise price of \$0.25 per share. In addition, the Company issued warrants to the placement agent that have an exercise price of \$12.50 per share of common stock. All of the warrants issued in the July 2017 Public Offering are immediately exercisable and have a five-year term from the date of issuance.

Holders of the pre-funded warrants may not exercise any portion of the pre-funded warrant to the extent that such holder would own more than 4.99% of the outstanding common stock immediately after exercise, except that upon at least 61 days' prior notice from the holder to the Company, the holder may increase the amount of ownership of outstanding stock after exercising the holder's pre-funded warrants up to 9.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the pre-funded warrants. Purchasers of pre-funded units in could also elect prior to the issuance of the pre-funded units to have the initial exercise limitation set at 9.99% of the Company's outstanding common stock. As of the date of this prospectus supplement, all of the pre-funded warrants have been exercised.

On February 6, 2018, the Company closed a public offering, or the February 2018 Public Offering of 2,841,152 units at \$3.25 per unit, and 851,155 pre-funded units at \$3.24 per pre-funded unit. Each unit included one share of common stock and one common warrant to purchase 0.5 share of common stock at an exercise price of \$3.25 per share. Each pre-funded unit included one pre-funded warrant to purchase one share of common stock for an exercise price of \$0.01 per share, and one common warrant to purchase 0.5 share of common stock at an exercise price of \$3.25 per share. The common warrants are exercisable immediately and have a five-year term from the date of issuance. As of April 19, 2018, all 851,155 pre-funded warrants issued in the February 2018 Public Offering have been exercised. In connection with the February 2018 Public Offering, the Company issued to its placement agent warrants to purchase 184,615 shares of common stock. The warrants issued to the Placement Agent have an exercise price of \$4.0625 per share and are exercisable for five years.

Registration Rights

Investors' Rights Agreement

Under the Third Amended and Restated Investors' Rights Agreement, dated as of December 18, 2013, among the Company and certain investors, or the investors' rights agreement, we granted registration rights to the holders of shares acquired prior to our initial public offering, or their permitted transferees. These rights are provided under the terms of the investors' rights agreement, and include demand registration rights, short-form registration rights and piggyback registration rights. All fees, costs and expenses of underwritten registrations will be borne by us and all selling expenses, including underwriting discounts and selling commissions, will be borne by the holders of the shares being registered. As of the date of this prospectus supplement, the holders of 259,638 shares of our common stock have registration rights under the investors' rights agreement. The investors' rights agreement contains customary cross-indemnification provisions, under which we are obligated to indemnify holders of registrable shares in the event of material misstatements or omissions in the registration statement attributable to us, and they are obligated to indemnify us for material misstatements or omissions attributable to them. The registration rights granted under the investors' rights agreement will terminate at the earlier of the closing of a deemed liquidation event and when all of the holders of registrable securities are eligible to be sold without restrictions under Rule 144 promulgated under the Securities Act within any 90-day period.

AdvanDx Merger and MGHIF Investment

In connection with the July 2015 merger transaction among the Company, a merger sub and AdvanDx, Inc., and the related transactions in which MGHIF purchased shares of our common stock and initially issued the MGHIF Note, the Company also entered into a registration rights agreement with the AdvanDx stockholders receiving merger consideration and with MGHIF, pursuant to which the investors were granted certain demand registration rights and piggyback registration rights in connection with subsequent registered offerings of the Company's common stock. MGHIF also received rights to participate on a pro-rata basis in future securities offerings by the Company. MGHIF is the only holder of registrable securities under this registration rights agreement.

Bridge Financing Registration Rights

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

UNDERWRITING

We are offering the shares of common stock described in this prospectus supplement and the accompanying prospectus through Aegis Capital Corp., acting as the sole book-running manager of this offering. The underwriting agreement provides that the obligations of the underwriter are subject to representations, warranties and conditions contained therein. The underwriter has agreed to buy, subject to the terms of the underwriting agreement, the number of shares of common stock listed opposite its name below. The underwriter is committed to purchase and pay for all of the shares if any are purchased, other than those shares covered by the over-allotment option described below.

Underwriter

Number of Shares

Aegis Capital Corp
Total

The underwriter has advised us that it proposes to offer the shares of common stock to the public at a price of \$ per share. The underwriter proposes to offer the shares of common stock to certain dealers at the same price less a concession of not more than \$ per share. If all of the shares are not sold at the public offering price, the underwriter may change the offering price and other selling terms and we will file a supplement to reflect such modified terms.

The shares sold in this offering are expected to be ready for delivery on or about October , 2018, against payment in immediately available funds. The underwriter may reject all or part of any order.

We have granted to the underwriter an option to purchase up to an additional shares of common stock (equal to 15% of the number of shares offered hereby) from us at the same price to the public, and with the same underwriting discount, as set forth in the table below. The underwriter may exercise this option any time during the 45-day period after the date of this prospectus supplement, but only to cover over-allotments, if any. To the extent the underwriter exercises the option, the underwriter will become obligated, subject to certain conditions, to purchase the shares for which it exercises the option.

The table below summarizes the underwriting discounts that we will pay to the underwriter. These amounts are shown assuming both no exercise and full exercise of the over-allotment option. The underwriting discount and reimbursable expenses

	Number of Shares	Total With No Over-Allotment	Total With Over-Allotment
Underwriting discount to be paid by us			

We estimate that our total expenses of this offering, excluding underwriting discounts, will be approximately \$. We have also agreed to reimburse the underwriter for its legal fees and expenses in the amount of \$ and up to \$ for other offering expenses, subject to compliance with FINRA Rule 5110(f)(2)(d)(i).

We have also agreed to indemnify the underwriter against certain liabilities, including civil liabilities under the Securities Act, or to contribute to payments that the underwriter may be required to make in respect of those liabilities.

No Sales of Securities

We and each of our directors and officers have agreed not to offer, sell, agree to sell, directly or indirectly, or otherwise dispose of any shares of common stock or any securities convertible into or exchangeable for shares of common stock without the prior written consent of the underwriter for a period of 90 days after the date of the final prospectus supplement. These lock-up agreements provide limited exceptions and their restrictions may be waived at any time by the underwriter.

Right of First Refusal

In addition, we have granted a right of first refusal to the underwriter pursuant to which it has the right to act as the exclusive advisor, manager or underwriter or agent, as applicable, if we or our subsidiaries sell or acquire a business, finance any indebtedness using an agent, or raise capital through a public or private offering of equity or debt securities at any time prior to the date that is six (6) months after the date of consummation of this offering.

Price Stabilization, Short Positions and Penalty Bids

To facilitate this offering, the underwriter may engage in transactions that stabilize, maintain or otherwise affect the price of our common stock during and after the offering. Specifically, the underwriter may over-allot or otherwise create a short position in our common stock for its own account by selling more shares of common stock than we have sold to the underwriter. The underwriter may close out any short position by either exercising its option to purchase additional shares or purchasing shares in the open market.

In addition, the underwriter may stabilize or maintain the price of our common stock by bidding for or purchasing shares in the open market and may impose penalty bids. If penalty bids are imposed, selling concessions allowed to broker-dealers participating in this offering are reclaimed if shares previously distributed in this offering are repurchased, whether in connection with stabilization transactions or otherwise. The effect of these transactions may be to stabilize or maintain the market price of our common stock at a level above that which might otherwise prevail in the open market. The imposition of a penalty bid may also affect the price of our common stock to the extent that it discourages resales of our common stock. The magnitude or effect of any stabilization or other transactions is uncertain. These transactions may be effected on the Nasdaq Capital Market or otherwise and, if commenced, may be discontinued at any time.

In connection with this offering, the underwriter and selling group members, if any, may also engage in passive market making transactions in our common stock on the Nasdaq Capital Market. Passive market making consists of displaying bids on the Nasdaq Capital Market by the prices of independent market makers and effecting purchases limited by those prices in response to order flow. Rule 103 of Regulation M promulgated by the SEC limits the amount of net purchases that each passive market maker may make and the displayed size of each bid. Passive market making may stabilize the market price of our common stock at a level above that which might otherwise prevail in the open market and, if commenced, may be discontinued at any time.

Neither we nor the underwriter make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our common stock. In addition, neither we nor the underwriter make any representation that the underwriter will engage in these transactions or that any transaction, if commenced, will not be discontinued without notice.

Affiliations

The underwriter and its affiliates is a full service financial institution engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. The underwriter may in the future engage in investment banking and other commercial dealings in the ordinary course of business with us or our affiliates. The underwriter may in the future receive customary fees and commissions for these transactions. We have not engaged the underwriter to perform any services for us in the previous 180 days, nor do we have any agreement to engage the underwriter to perform any services for us in the future, other than as described above under "Right of First Refusal."

In the ordinary course of its various business activities, the underwriter and its affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for its own account and for the accounts of its customers, and such investment and securities activities may involve securities and/or instruments of the issuer. The underwriter and its affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

Electronic Offer, Sale and Distribution

In connection with this offering, the underwriter or certain of the securities dealers may distribute prospectuses by electronic means, such as e-mail.

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

The validity of the securities offered by this prospectus supplement will be passed upon for us by Ballard Spahr LLP, Philadelphia, Pennsylvania.

EXPERTS

The consolidated financial statements of OpGen, Inc. as of December 31, 2017 and 2016 and for the years then ended, included in our Annual Report on Form 10-K for the year ended December 31, 2017, 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 ADDITIONAL INFORMATION

We filed with the Securities and Exchange Commission a registration statement on Form S-3 under the Securities Act of 1933 for the shares of common stock offered by this prospectus supplement and the accompanying prospectus. This prospectus supplement does not contain all of the information in the registration statement and the exhibits and schedule that were filed with the registration statement. For further information with respect to us and our common stock, we refer you to the registration statement and the exhibits and schedule that were filed with the registration statement. Statements contained in this prospectus supplement about the contents of any contract or any other document that is filed as an exhibit to the registration statement are not necessarily complete, and we refer you to the full text of the contract or other document filed as an exhibit to the registration statement. A copy of the registration statement and the exhibits and schedules that were filed with the registration statement may be inspected without charge at the Public Reference Room maintained by the Securities and Exchange Commission at 100 F Street, N.E. Washington, DC 20549, and copies of all or any part of the registration statement may be obtained from the Securities and Exchange Commission upon payment of the prescribed fee. Information regarding the operation of the Public Reference Room may be obtained by calling the Securities and Exchange Commission at 1-800-SEC-0330. The Securities and Exchange Commission maintains a website that contains reports, proxy and information statements, and other information regarding registrants that file electronically with the SEC. The address of the website is www.sec.gov. We file periodic reports under the Securities Exchange Act of 1934, including annual, quarterly and special reports, and other information with the Securities and Exchange Commission. These periodic reports and other information are available for inspection and copying at the regional offices, public reference facilities and website of the Securities and Exchange Commission referred to above.

INCORPORATION OF CERTAIN DOCUMENTS 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 fiscal year ended December 31, 2017, filed with the SEC on March 29, 2018;
- our Quarterly Reports on Form 10-Q for the three months ended March 31, 2018 and June 30, 2018, filed with the SEC on May 14, 2018 and August 8, 2018, respectively;
- our Definitive Proxy Statement on Schedule 14A for our annual meeting of stockholders to be held on June 13, 2018, filed with the SEC on April 30, 2018; and
- our Current Reports on Form 8-K filed with the SEC on May 8, 2018 (Item 9.01), June 11, 2018 (Item 1.01, 2.02, 3.02 and 9.01), June 15, 2018 (Item 5.07), August 6, 2018 (Item 9.01), September 24, 2018 (Item 8.01 and 9.01), September 25, 2018 (Item 5.02 and 9.01) and October 16, 2018 (Item 2.02 and 9.01).

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%).

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.

Shares



Common Stock

PROSPECTUS SUPPLEMENT

Aegis Capital Corp.

October , 2018
