
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

Washington, DC 20549

FORM 8-K/A

CURRENT REPORT

**Pursuant to Section 13 or 15(d) of the
Securities Exchange Act of 1934**

May 31, 2017

Date of Report (date of earliest event reported)

OpGen, Inc.

(Exact name of Registrant as specified in its charter)

**Delaware
(State or other jurisdiction of
incorporation or organization)**

**001-37367
(Commission
File Number)**

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

**708 Quince Orchard Road, Suite 205
Gaithersburg, MD 20878
(Address of principal executive offices)**

**(240) 813-1260
(Registrant's telephone number, including area code)**

**Not Applicable
(Former name or former address, if changed since last report)**

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Explanatory Note

On June 6, 2017, OpGen, Inc. (the "Company") filed a Current Report on Form 8-K to disclose that it had entered into a Note Purchase Agreement with jVen Capital, LLC, a Delaware limited liability company ("jVen Capital"), under which jVen Capital agreed to lend bridge financing in an aggregate principal amount of up to \$1,500,000 (the "Bridge Financing") to the Company in the form of three \$500,000 secured convertible promissory notes (the "Note Purchase Agreement"). Subsequently, the terms of the Bridge Financing promissory notes, the common stock warrants to be issued in connection with the Bridge Financing, and a related amendment and restatement of an existing secured promissory note issued to Merck Global Health Innovation Fund, LLC, a Delaware limited liability company ("MGHIF"), all to be issued in connection with the Note Purchase Agreement have been revised to incorporate certain clauses to comply with applicable NASDAQ requirements. The purpose of this amended Current Report on Form 8-K is to provide updated disclosure regarding the Bridge Financing transactions.

Item 1.01 Entry into a Material Definitive Agreement.

The disclosure set forth below in Item 3.02 of this amended Current Report on Form 8-K relating to the amended Bridge Financing Notes, A&R MGHIF Note and Warrants is hereby incorporated into this item by reference.

jVen Capital is an affiliate of Evan Jones, the Company's Chairman of the Board and Chief Executive Officer. The changes to the Bridge Financing Notes and Warrants were approved by the independent members of the Company's Board of Directors. In addition, David Rubin, Ph.D., a member of the Board of Directors of the Company and affiliated with MGHIF disclosed his affiliation with MGHIF to the independent members of the Board and recused himself from approval of the A&R MGHIF Note.

Item 2.03 Creation of a Direct Financial Obligation or an Obligation under an Off-Balance Sheet Arrangement of a Registrant.

The descriptions of the Bridge Financing Notes and the A&R MGHIF Note in Section 3.02 of this amended Current Report on Form 8-K is incorporated by reference into this Item 2.03.

Item 3.02 Unregistered Sales of Equity Securities.

Note Purchase Agreement

On May 31, 2017, the Company entered into a Note Purchase Agreement with jVen Capital, under which jVen Capital agreed to lend Bridge Financing in an aggregate principal amount of up to \$1,500,000 to the Company in the form of three \$500,000 secured convertible promissory notes (each, a "Bridge Financing Note" and collectively, the "Bridge Financing Notes"). The interest rate on each Bridge Financing Note is ten percent (10%) per annum and the maturity date is September 30, 2017, subject to acceleration or extension. If, prior to September 30, 2017, the Company closes a "qualified financing" (defined as an offering of debt or equity securities with net proceeds to the Company of \$5 million or more), the maturity date of each outstanding Bridge Financing Note will be accelerated to the date that is five business days after the closing of the qualified financing. If a qualified financing has not occurred by September 30, 2017, but the Company is then actively pursuing a qualified financing, the maturity date of the outstanding Bridge Financing Notes may be extended by jVen Capital to not later than December 31, 2017.

Pursuant to the terms of the Note Purchase Agreement and the underlying Bridge Financing Notes, if a qualified financing occurs, the Company has the option to repay one \$500,000 Bridge Financing Note, plus accrued and unpaid interest, by issuing to jVen Capital securities sold in the qualified financing at a discount of 10% of the offering price in the qualified financing. Further, jVen Capital may elect to tender the principal and accrued interest of any remaining outstanding Bridge Financing Notes to the Company to be repaid through the issuance of securities sold in the qualified financing at a discount of 10% of the offering price in the qualified financing.

If the Bridge Financing Notes are outstanding and an event of default occurs (if the Company does not pay any outstanding Bridge Financing Notes when due, fails to pay any other outstanding indebtedness on a timely basis, seeks to liquidate the Company or enters into a bankruptcy proceeding), the then-outstanding Bridge Financing Notes would become immediately due and payable. At the time of an event of default, jVen Capital has the right to convert the Bridge Financing Notes to non-voting Series B Convertible Preferred Stock (the "Series B Preferred") at a ratio of one share of Series B Preferred per \$1.00 of principal and accrued interest, which Series B Preferred would be convertible into ten (10) shares of voting common stock, otherwise the Series B Preferred has no preferences. If the outstanding Bridge Financing Notes are not converted by jVen Capital, and jVen Capital continues as a secured creditor of the Company, the Bridge Financing Notes acquire a two times liquidation preference for unpaid principal and interest.

As a condition to the issuance of Bridge Financing Notes, MGHIF was required to extend the maturity date of the July 2015 \$1,000,000 secured promissory note (the "MGHIF Note") by one year to July 14, 2018. As consideration for the agreement to extend the maturity date of the MGHIF Note, the Company issued an amended and restated secured promissory note to MGHIF (the "A&R MGHIF Note") that (1) increased the interest rate to ten percent (10%) per annum and (2) provided for the issuance of common stock warrants, as described below.

Warrants

Pursuant to the Note Purchase Agreement and the underlying transactions, the Company will issue warrants to purchase shares of its common stock (the "Warrants") to jVen Capital in an amount equal to ten percent (10%) of the principal of the Bridge Financing Note (the "jVen Warrants"), and to MGHIF in an amount equal to twenty percent (20%) of the outstanding principal and accrued interest on the date of issuance, in private placement transactions. 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 of issuance.

Blocker Provisions

The Bridge Financing Notes, the jVen Warrants and the Series B Preferred Stock each includes a blocker provision that prevents the repayment of the Bridge Financing Notes at a qualified financing through the issuance of securities, the exercise of the jVen Warrants and/or the conversion of the Series B Preferred Stock to common stock, if such repayment, exercise or conversion, 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.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

The following exhibits are filed herewith:

| <u>Exhibit</u> | <u>Description</u> |
|-----------------------|--|
| 3.1 | Form of Certificate of Designation of the Series B Convertible Preferred Stock |
| 4.1 | Form of Warrant to Purchase Common Stock |
| 10.1 | Form of Secured Convertible Promissory Note #1 to be issued by OpGen, Inc. to jVen Capital, LLC under the Note Purchase Agreement |
| 10.2 | Form of Secured Convertible Promissory Note #2 and #3 to be issued by OpGen, Inc. to jVen Capital, LLC under the Note Purchase Agreement |
| 10.3 | Second Amended and Restated Senior Secured Convertible Promissory Note issued by OpGen, Inc. to Merck Global Health Innovation Fund, LLC on June 28, 2017 |
| 10.4 | Note Purchase Agreement, dated as of May 31, 2016, between OpGen, Inc. and jVen Capital, LLC (incorporated by reference to Exhibit 10.21 of Form S-1, File No. 333-218392, filed June 1, 2017) |

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

OpGen, Inc.

Date: June 28, 2017

By: /s/ Timothy C. Dec

Timothy C. Dec
Chief Financial Officer

OPGEN, INC.
CERTIFICATE OF DESIGNATION OF PREFERENCES,
RIGHTS AND LIMITATIONS
OF
SERIES B CONVERTIBLE PREFERRED STOCK

PURSUANT TO SECTION 151 OF THE
DELAWARE GENERAL CORPORATION LAW

The undersigned, Timothy C. Dec, does hereby certify that:

1. He is the Chief Financial Officer of OpGen, Inc., a Delaware corporation (the "Corporation").
2. The Corporation is authorized to issue 10,000,000 shares of preferred stock, 2,309,428 of which have been issued.
3. The following resolutions were duly adopted by the board of directors of the Corporation (the "Board of Directors"):

WHEREAS, the certificate of incorporation of the Corporation provides for a class of its authorized stock known as preferred stock, consisting of 10,000,000 shares, \$0.01 par value per share, issuable from time to time in one or more series;

WHEREAS, the Board of Directors is authorized to fix the dividend rights, dividend rate, voting rights, conversion rights, rights and terms of redemption and liquidation preferences of any wholly unissued series of preferred stock and the number of shares constituting any series and the designation thereof, of any of them;

WHEREAS, the Board of Directors previously authorized and the Corporation previously issued 2,309,428 shares of Series A Preferred Stock, par value \$0.01 per share, none of which are currently outstanding; and

WHEREAS, it is the desire of the Board of Directors, pursuant to its authority as aforesaid, to fix the rights, preferences, restrictions and other matters relating to a series of the preferred stock, which shall consist of up to 2,000,000 shares of the preferred stock which the Corporation has the authority to issue, as follows:

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors does hereby provide for the issuance of a series of preferred stock for cash or exchange of other securities, rights or property and does hereby fix and determine the rights, preferences, restrictions and other matters relating to such series of preferred stock as follows:

TERMS OF PREFERRED STOCK

Section 1. Definitions. For the purposes hereof, the following terms shall have the following meanings:

"Affiliate" means any Person that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a Person, as such terms are used in and construed under Rule 405 of the Securities Act.

"Alternate Consideration" shall have the meaning set forth in Section 7(e).

"Business Day" means any day except any Saturday, any Sunday, any day which is a federal legal holiday in the United States or any day on which banking institutions in the State of New York are authorized or required by law or other governmental action to close.

"Buy-In" shall have the meaning set forth in Section 6(c)(iv).

"Closing" means the closing of the purchase and sale of the Securities pursuant to Section 2.1 of the Purchase Agreement.

"Commission" means the United States Securities and Exchange Commission.

"Common Stock" means the Corporation's common stock, par value \$0.01 per share, and stock of any other class of securities into which such securities may hereafter be reclassified or changed.

"Common Stock Equivalents" means any securities of the Corporation or any of its subsidiaries which would entitle the holder thereof to acquire at any time Common Stock, including, without limitation, any debt, preferred stock, rights, options, warrants or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock.

"Conversion Amount" means the sum of the Stated Value at issue.

"Conversion Date" shall have the meaning set forth in Section 6(a).

"Conversion Price" shall have the meaning set forth in Section 6(b).

"Conversion Shares" means, collectively, the shares of Common Stock issuable upon conversion of the shares of Preferred Stock in accordance with the terms hereof.

"Exchange Act" means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

"Fundamental Transaction" shall have the meaning set forth in Section 7(e).

"Holder" shall have the meaning given such term in Section 2.

"Liquidation" shall have the meaning set forth in Section 5.

"Notice of Conversion" shall have the meaning set forth in Section 6(a).

"Original Issue Date" means the date of the first issuance of any shares of the Preferred Stock regardless of the number of transfers of any particular shares of Preferred Stock and regardless of the number of certificates which may be issued to evidence such Preferred Stock.

"Person" means an individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability company, joint stock company, government (or an agency or subdivision thereof) or other entity of any kind.

"Preferred Stock" shall have the meaning set forth in Section 2.

"Purchase Agreement" means the Note Purchase Agreement, dated as of May 31, 2017, among the Corporation and jVen Capital, LLC, as amended, modified or supplemented from time to time in accordance with its terms.

"Securities Act" means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

"Share Delivery Date" shall have the meaning set forth in Section 6(c).

"Stated Value" shall have the meaning set forth in Section 2.

"Successor Entity" shall have the meaning set forth in Section 7(e).

"Trading Day" means a day on which the principal Trading Market is open for business.

"Trading Market" means any of the following markets or exchanges on which the Common Stock is listed or quoted for trading on the date in question: the NYSE MKT, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market, the New York Stock Exchange (or any successors to any of the foregoing).

"Transfer Agent" means Philadelphia Stock Transfer, Inc., the current transfer agent of the Corporation with a mailing address of 2320 Haverford Rd, Ardmore, PA 19003 and a facsimile number of 484-416-3597, and any successor transfer agent of the Corporation.

"Warrants" means, collectively, the Common Stock purchase warrants delivered to the Holder at each Closing in accordance with Section 1.1(b) of the Purchase Agreement.

"Warrant Shares" means the shares of Common Stock issuable upon exercise of the Warrants.

Section 2. Designation, Amount and Par Value. The series of preferred stock shall be designated as its Series B Convertible Preferred Stock (the "Preferred Stock") and the number of shares so designated shall be up to 2,000,000 (which shall not be subject to increase without the written consent of all of the holders of the Preferred Stock (each, a "Holder" and collectively, the "Holders")). Each share of Preferred Stock shall have a par value of \$0.01 per share and a stated value equal to \$1.00 (the "Stated Value").

Section 3. Dividends. Except for stock dividends or distributions for which adjustments are to be made pursuant to Section 7, Holders shall be entitled to receive, and the Corporation shall pay, dividends on shares of Preferred Stock equal (on an as-if-converted-to-Common-Stock basis) to and in the same form as dividends actually paid on shares of the Common Stock when, as and if such dividends are paid on shares of the Common Stock. No other dividends shall be paid on shares of Preferred Stock.

Section 4. Voting Rights. Except as otherwise provided herein or as otherwise required by law, the Preferred Stock shall have no voting rights. However, as long as any shares of Preferred Stock are outstanding, the Corporation shall not, without the affirmative vote of the Holders of a majority of the then outstanding shares of the Preferred Stock, (a) alter or change adversely the powers, preferences or rights given to the Preferred Stock or alter or amend this Certificate of Designation, (b) amend its certificate of incorporation or other charter documents in any manner that adversely affects any rights of the Holders, (c) increase the number of authorized shares of Preferred Stock, or (d) enter into any agreement with respect to any of the foregoing.

Section 5. Liquidation.

a) The Preferred Stock shall rank on par with the Common Stock, in each case, as to (i) dividend rights and (ii) distributions of assets upon liquidation, dissolution or winding up of the Corporation, whether voluntarily or involuntarily.

b) Upon liquidation, dissolution or winding up of the Corporation, whether voluntary or involuntary, each holder of shares of Preferred Stock shall be entitled to receive, on a pari passu basis with the holders of Common Stock (on an as-if-converted-to-Common-Stock basis without giving effect to the limitations set forth in Section 6(d)) any distributions of any of the assets or surplus funds of the Corporation legally available for distribution to the holders of the Common Stock.

Section 6. Conversion.

a) Conversions at Option of Holder. Each share of Preferred Stock shall be convertible, at any time and from time to time from and after the Original Issue Date at the option of the Holder thereof, into that number of shares of Common Stock (subject to the limitations set forth in Section 6(d)) determined by dividing the Stated Value of such share of Preferred Stock by the Conversion Price. Holders shall effect conversions by providing the Corporation with the form of conversion notice attached hereto as Annex A (a "Notice of Conversion"). Each Notice of Conversion shall specify the number of shares of Preferred Stock to be converted, the number of shares of Preferred Stock owned prior to the conversion at issue, the number of shares of Preferred Stock owned subsequent to the conversion at issue and the date on which such conversion is to be effected, which date may not be prior to the date the applicable Holder delivers by facsimile such Notice of Conversion to the Corporation (such date, the "Conversion Date"). If no Conversion Date is specified in a Notice of Conversion, the Conversion Date shall be the date that such Notice of Conversion is deemed delivered hereunder. No ink-original Notice of Conversion shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Conversion form be required. The calculations and entries set forth in the Notice of Conversion shall control in the absence of manifest or mathematical error. To effect conversions of shares of Preferred Stock, a Holder shall not be required to surrender the certificate(s) representing the shares of Preferred Stock to the Corporation unless all of the shares of Preferred Stock represented thereby are so converted, in which case such Holder shall deliver the certificate representing such shares of Preferred Stock promptly following the Conversion Date at issue. Shares of Preferred Stock converted into Common Stock or redeemed in accordance with the terms hereof shall be canceled and shall not be reissued.

b) Conversion Price. The conversion price for the Preferred Stock shall equal \$0.10 subject to adjustment herein (the "Conversion Price").

c) Mechanics of Conversion

i. Delivery of Conversion Shares Upon Conversion. Not later than three (3) Trading Days after each Conversion Date (the "Share Delivery Date"), the Corporation shall deliver, or cause to be delivered, to the converting Holder (A) the number of Conversion Shares being acquired upon the conversion of the Preferred Stock, which Conversion Shares shall be free of restrictive legends and trading restrictions (other than such legends and restrictions in connection with the status of Holder as an affiliate of the Corporation, if applicable) and (B) a bank check in the amount of accrued and unpaid dividends, if any, in accordance with Section 3. The Corporation shall deliver the Conversion Shares in certificated form or, if eligible, electronically through the Depository Trust Company or another established clearing corporation performing similar functions.

ii. Failure to Deliver Conversion Shares. If, in the case of any Notice of Conversion, such Conversion Shares are not delivered to or as directed by the applicable Holder by the Share Delivery Date, the Holder shall be entitled to elect by written notice to the Corporation at any time on or before its receipt of such Conversion Shares, to rescind such Conversion, in which event the Corporation shall promptly return to the Holder any original Preferred Stock certificate delivered to the Corporation and the Holder shall promptly return to the Corporation the Conversion Shares issued to such Holder pursuant to the rescinded Conversion Notice.

iii. Obligation Absolute; Partial Liquidated Damages. The Corporation's obligation to issue and deliver the Conversion Shares upon conversion of Preferred Stock in accordance with the terms hereof are absolute and unconditional, irrespective of any action or inaction by a Holder to enforce the same, any waiver or consent with respect to any provision hereof, the recovery of any judgment against any Person or any action to enforce the same, or any setoff, counterclaim, recoupment, limitation or termination, or any breach or alleged breach by such Holder or any other Person of any obligation to the Corporation or any violation or alleged violation of law by such Holder or any other person, and irrespective of any other circumstance which might otherwise limit such obligation of the Corporation to such Holder in connection with the issuance of such Conversion Shares; provided, however, that such delivery shall not operate as a waiver by the Corporation of any such action that the Corporation may have against such Holder. In the event a Holder shall elect to convert any or all of the Stated Value of its Preferred Stock, the Corporation may not refuse conversion based on any claim that such Holder or any one associated or affiliated with such Holder has been engaged in any violation of law, agreement or for any other reason, unless an injunction from a court, on notice to Holder, restraining and/or enjoining conversion of all or part of the Preferred Stock of such Holder shall have been sought and obtained, and the Corporation posts a surety bond for the benefit of such Holder in the amount of 150% of the Stated Value of Preferred Stock which is subject to the injunction, which bond shall remain in effect until the completion of arbitration/litigation of the underlying dispute and the proceeds of which shall be payable to such Holder to the extent it obtains judgment. In the absence of such injunction, the Corporation shall issue Conversion Shares and, if applicable, cash, upon a properly noticed conversion. If the Corporation fails to deliver to a Holder such Conversion Shares pursuant to Section 6(c)(i) on the second Trading Day after the Share Delivery Date applicable to such conversion, the Corporation shall pay to such Holder, in cash, as liquidated damages and not as a penalty, for each \$5,000 of Stated Value of Preferred Stock being converted, \$50 per Trading Day (increasing to \$100 per Trading Day on the third Trading Day and increasing to \$200 per Trading Day on the sixth Trading Day after such damages begin to accrue) for each Trading Day after such second Trading Day after the Share Delivery Date until such Conversion Shares are delivered or Holder rescinds such conversion. Nothing herein shall limit a Holder's right to pursue actual damages for the Corporation's failure to deliver Conversion Shares within the period specified herein and such Holder shall have the right to pursue all remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief. The exercise of any such rights shall not prohibit a Holder from seeking to enforce damages pursuant to any other Section hereof or under applicable law.

iv. Compensation for Buy-In on Failure to Timely Deliver Conversion Shares Upon Conversion. In addition to any other rights available to the Holder, if the Corporation fails for any reason to deliver to a Holder the applicable Conversion Shares by the Share Delivery Date pursuant to Section 6(c)(i), and if after such Share Delivery Date such Holder is required by its brokerage firm to purchase (in an open market transaction or otherwise), or the Holder's brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by such Holder of the Conversion Shares which such Holder was entitled to receive upon the conversion relating to such Share Delivery Date (a "Buy-In"), then the Corporation shall (A) pay in cash to such Holder (in addition to any other remedies available to or elected by such Holder) the amount, if any, by which (x) such Holder's total purchase price (including any brokerage commissions) for the Common Stock so purchased exceeds (y) the product of (1) the aggregate number of shares of Common Stock that such Holder was entitled to receive from the conversion at issue multiplied by (2) the actual sale price at which the sell order giving rise to such purchase obligation was executed (including any brokerage commissions) and (B) at the option of such Holder, either reissue (if surrendered) the shares of Preferred Stock equal to the number of shares of Preferred Stock submitted for conversion (in which case, such conversion shall be deemed rescinded) or deliver to such Holder the number of shares of Common Stock that would have been issued if the Corporation had timely complied with its delivery requirements under Section 6(c)(i). For example, if a Holder purchases shares of Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted conversion of shares of Preferred Stock with respect to which the actual sale price of the Conversion Shares (including any brokerage commissions) giving rise to such purchase obligation was a total of \$10,000 under clause (A) of the immediately preceding sentence, the Corporation shall be required to pay such Holder \$1,000. The Holder shall provide the Corporation written notice indicating the amounts payable to such Holder in respect of the Buy-In and, upon request of the Corporation, evidence of the amount of such loss. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Corporation's failure to timely deliver the Conversion Shares upon conversion of the shares of Preferred Stock as required pursuant to the terms hereof.

v. Reservation of Shares Issuable Upon Conversion. The Corporation covenants that it will at all times reserve and keep available out of its authorized and unissued shares of Common Stock for the sole purpose of issuance upon conversion of the Preferred Stock as herein provided, free from preemptive rights or any other actual contingent purchase rights of Persons other than the Holder (and the other holders of the Preferred Stock), not less than such aggregate number of shares of the Common Stock as shall (subject to the terms and conditions set forth in the Purchase Agreement) be issuable (taking into account the adjustments and restrictions of Section 7) upon the conversion of the then outstanding shares of Preferred Stock. The Corporation covenants that all shares of Common Stock that shall be so issuable shall, upon issue, be duly authorized, validly issued, fully paid and nonassessable.

vi. Fractional Shares. No fractional shares or scrip representing fractional shares shall be issued upon the conversion of the Preferred Stock. As to any fraction of a share which the Holder would otherwise be entitled to purchase upon such conversion, the Corporation shall at its election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the Conversion Price or round up to the next whole share.

vii. Transfer Taxes and Expenses. The issuance of Conversion Shares on conversion of this Preferred Stock shall be made without charge to any Holder for any documentary stamp or similar taxes that may be payable in respect of the issue or delivery of such Conversion Shares, provided that the Corporation shall not be required to pay any tax that may be payable in respect of any transfer involved in the issuance and delivery of any such Conversion Shares upon conversion in a name other than that of the Holders of such shares of Preferred Stock and the Corporation shall not be required to issue or deliver such Conversion Shares unless or until the Person or Persons requesting the issuance thereof shall have paid to the Corporation the amount of such tax or shall have established to the satisfaction of the Corporation that such tax has been paid. The Corporation shall pay all Transfer Agent fees required for same-day processing of any Notice of Conversion and all fees to the Depository Trust Company (or another established clearing corporation performing similar functions) required for same-day electronic delivery of the Conversion Shares.

d) Principal Market Regulation. The Corporation shall not affect any conversion of the Preferred Stock, and a Holder shall not have the right to convert any portion of the Preferred Stock, to the extent that, after giving effect to the conversion set forth on the applicable Notice of Conversion, such conversion, aggregated with the shares of Common Stock which the Corporation may issue under any other securities issued pursuant to the terms of the Purchase Agreement, would result in (i) the issuance of Common Stock equal to 20% or more of the Common Stock or 20% or more of the voting power outstanding as of the date of the Note Purchase Agreement for less than the greater of book or market value of the stock in violation of Nasdaq Stock Market Rule 5635(d) or (ii) a change of control for purposes of Nasdaq Stock Market Rule 5635(b), in each case, unless stockholder approval of such issuance has previously been obtained in accordance with the rules of the Nasdaq Stock Market. The determination of the applicability of the limitation contained in this Section 6(d) shall be in the sole discretion of the Corporation and shall be made by the Corporation in accordance with the rules and regulations of the Nasdaq Stock Market. In the event that the limitation contained in this Section 6(d) prevents the conversion of shares of Preferred Stock, the affected Holder(s) shall have the right to instead require the Corporation to redeem any or all of the Series B Preferred Stock that is ineligible for conversion at a redemption price equal to the product of: (x) the number of Conversion Shares underlying the to-be-redeemed Series B Preferred Stock, multiplied by (y) the volume weighted average price (as reported by Bloomberg) of the Corporation's common stock over the five full trading days prior to the date of delivery of such notice of redemption. The redemption amount shall be paid by the Corporation within three trading days of the Holder tendering a notice of redemption arising from a conversion prevented by the operation of this Section 6(d).

Section 7. Certain Adjustments.

a) Stock Dividends and Stock Splits. If the Corporation, at any time while this Preferred Stock is outstanding: (i) pays a stock dividend or otherwise makes a distribution or distributions payable in shares of Common Stock on shares of Common Stock or any other Common Stock Equivalents (which, for avoidance of doubt, shall not include any shares of Common Stock issued by the Corporation upon conversion of, or payment of a dividend on, this Preferred Stock), (ii) subdivides outstanding shares of Common Stock into a larger number of shares, (iii) combines (including by way of a reverse stock split) outstanding shares of Common Stock into a smaller number of shares, or (iv) issues, in the event of a reclassification of shares of the Common Stock, any shares of capital stock of the Corporation, then the Conversion Price shall be multiplied by a fraction of which the numerator shall be the number of shares of Common Stock (excluding any treasury shares of the Corporation) outstanding immediately before such event, and of which the denominator shall be the number of shares of Common Stock outstanding immediately after such event. Any adjustment made pursuant to this Section 7(a) shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date in the case of a subdivision, combination or re-classification.

b) RESERVED.

c) Subsequent Rights Offerings. In addition to any adjustments pursuant to Section 7(a) above, if at any time the Corporation grants, issues or sells any Common Stock Equivalents or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of shares of Common Stock (the "Purchase Rights"), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete conversion of such Holder's Preferred Stock (without regard to any limitations on exercise hereof, including without limitation, the limitations set forth in Section 6(d)) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the grant, issue or sale of such Purchase Rights (provided, however, to the extent that the Holder's right to participate in any such Purchase Right would result in the Holder exceeding the limitations set forth in Section 6(d), then the Holder shall not be entitled to participate in such Purchase Right to such extent (or beneficial ownership of such shares of Common Stock as a result of such Purchase Right to such extent) and such Purchase Right to such extent shall be held in abeyance for the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the limitations set forth in Section 6(d)).

d) Pro Rata Distributions. During such time as this Preferred Stock is outstanding, if the Corporation declares or makes any dividend or other distribution of its assets (or rights to acquire its assets) to holders of shares of Common Stock, by way of return of capital or otherwise (including, without limitation, any distribution of cash, stock or other securities, property or options by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a "Distribution"), at any time after the issuance of this Preferred Stock, then, in each such case, the Holder shall be entitled to participate in such Distribution to the same extent that the Holder would have participated therein if the Holder had held the number of shares of Common Stock acquirable upon complete conversion of this Preferred Stock (without regard to any limitations on conversion hereof, including without limitation, the limitations set forth in Section 6(d)) immediately before the date of which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the participation in such Distribution (provided, however, to the extent that the Holder's right to participate in any such Distribution would result in the Holder exceeding the limitations set forth in Section 6(d), then the Holder shall not be entitled to participate in such Distribution to such extent (or in the beneficial ownership of any shares of Common Stock as a result of such Distribution to such extent) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the limitations set forth in Section 6(d)).

e) Fundamental Transaction. If, at any time while this Preferred Stock is outstanding, (i) the Corporation, directly or indirectly, in one or more related transactions effects any merger or consolidation of the Corporation with or into another Person, (ii) the Corporation, directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of its assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (whether by the Corporation or another Person) is completed pursuant to which holders of Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of the outstanding Common Stock, (iv) the Corporation, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of the Common Stock or any compulsory share exchange pursuant to which the Common Stock is effectively converted into or exchanged for other securities, cash or property, or (v) the Corporation, directly or indirectly, in one or more related transactions consummates a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with another Person whereby such other Person acquires more than 50% of the outstanding shares of Common Stock (not including any shares of Common Stock held by the other Person or other Persons making or party to, or associated or affiliated with the other Persons making or party to, such stock or share purchase agreement or other business combination) (each a "Fundamental Transaction"), then, upon any subsequent conversion of this Preferred Stock, the Holder shall have the right to receive, for each Conversion Share that would have been issuable upon such conversion immediately prior to the occurrence of such Fundamental Transaction (without regard to any limitation in Section 6(d) on the conversion of this Preferred Stock), the number of shares of Common Stock of the successor or acquiring corporation or of the Corporation, if it is the surviving corporation, and any additional consideration (the "Alternate Consideration") receivable by holders of Common Stock as a result of such Fundamental Transaction for each share of Common Stock for which this Preferred Stock is convertible immediately prior to such Fundamental Transaction (without regard to any limitation in Section 6(d) on the conversion of this Preferred Stock). For purposes of any such conversion, the determination of the Conversion Price shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one share of Common Stock in such Fundamental Transaction, and the Corporation shall apportion the Conversion Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then the Holder shall be given the same choice as to the Alternate Consideration it receives upon any conversion of this Preferred Stock following such Fundamental Transaction. To the extent necessary to effectuate the foregoing provisions, any successor to the Corporation or surviving entity in such Fundamental Transaction shall file a new Certificate of Designation with the same terms and conditions and issue to the Holders new preferred stock consistent with the foregoing provisions and evidencing the Holders' right to convert such preferred stock into Alternate Consideration. The Corporation shall cause any successor entity in a Fundamental Transaction in which the Corporation is not the survivor (the "Successor Entity") to assume in writing all of the obligations of the Corporation under this Certificate of Designation and the other Transaction Documents (as defined in the Purchase Agreement) in accordance with the provisions of this Section 7(e) prior to such Fundamental Transaction and shall, at the option of the holder of this Preferred Stock, deliver to the Holder in exchange for this Preferred Stock a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Preferred Stock which is convertible for a corresponding number of shares of capital stock of such Successor Entity (or its parent entity) equivalent to the shares of Common Stock acquirable and receivable upon conversion of this Preferred Stock (without regard to any limitations on the conversion of this Preferred Stock) prior to such Fundamental Transaction, and with a conversion price which applies the conversion price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such number of shares of capital stock and such conversion price being for the purpose of protecting the economic value of this Preferred Stock immediately prior to the consummation of such Fundamental Transaction), and which is reasonably satisfactory in form and substance to the Holder. Upon the occurrence of any such Fundamental Transaction, the Successor Entity shall succeed to, and be substituted for (so that from and after the date of such Fundamental Transaction, the provisions of this Certificate of Designation and the other Transaction Documents referring to the "Corporation" shall refer instead to the Successor Entity), and may exercise every right and power of the Corporation and shall assume all of the obligations of the Corporation under this Certificate of Designation and the other Transaction Documents with the same effect as if such Successor Entity had been named as the Corporation herein.

f) Calculations. All calculations under this Section 7 shall be made to the nearest cent or the nearest 1/100th of a share, as the case may be. For purposes of this Section 7, the number of shares of Common Stock deemed to be issued and outstanding as of a given date shall be the sum of the number of shares of Common Stock (excluding any treasury shares of the Corporation) issued and outstanding.

g) Notice to the Holders.

i. Adjustment to Conversion Price. Whenever the Conversion Price is adjusted pursuant to any provision of this Section 7, the Corporation shall promptly deliver to each Holder a notice setting forth the Conversion Price after such adjustment and setting forth a brief statement of the facts requiring such adjustment.

ii. Notice to Allow Conversion by Holder. If (A) the Corporation shall declare a dividend (or any other distribution in whatever form) on the Common Stock, (B) the Corporation shall declare a special nonrecurring cash dividend on or a redemption of the Common Stock, (C) the Corporation shall authorize the granting to all holders of the Common Stock of rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any rights, (D) the approval of any stockholders of the Corporation shall be required in connection with any reclassification of the Common Stock, any consolidation or merger to which the Corporation is a party, any sale or transfer of all or substantially all of the assets of the Corporation, or any compulsory share exchange whereby the Common Stock is converted into other securities, cash or property or (E) the Corporation shall authorize the voluntary or involuntary dissolution, liquidation or winding up of the affairs of the Corporation, then, in each case, the Corporation shall cause to be filed at each office or agency maintained for the purpose of conversion of this Preferred Stock, and shall cause to be delivered to each Holder at its last address as it shall appear upon the stock books of the Corporation, at least ten (10) calendar days prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, rights or warrants, or if a record is not to be taken, the date as of which the holders of the Common Stock of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined or (y) the date on which such reclassification, consolidation, merger, sale, transfer or share exchange is expected to become effective or close, and the date as of which it is expected that holders of the Common Stock of record shall be entitled to exchange their shares of the Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer or share exchange, provided that the failure to deliver such notice or any defect therein or in the delivery thereof shall not affect the validity of the corporate action required to be specified in such notice. To the extent that any notice provided hereunder constitutes, or contains, material, non-public information regarding the Corporation or any of the subsidiaries, the Corporation shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K. The Holder shall remain entitled to convert the Conversion Amount of this Preferred Stock (or any part hereof) during the 10-day period commencing on the date of such notice through the effective date of the event triggering such notice except as may otherwise be expressly set forth herein.

Section 8. Miscellaneous.

a) Notices. Any and all notices or other communications or deliveries to be provided by the Holders hereunder including, without limitation, any Notice of Conversion, shall be in writing and delivered personally, by email or facsimile, or sent by a nationally recognized overnight courier service, addressed to the Corporation, at the principal place of business of the Corporation, Attention: Chief Financial Officer, email: tdec@opgen.com, facsimile number 301-869-9684 or such other email address or facsimile number or address as the Corporation may specify for such purposes by notice to the Holders delivered in accordance with this Section 8. Any and all notices or other communications or deliveries to be provided by the Corporation hereunder shall be in writing and delivered personally, by email or facsimile, or sent by a nationally recognized overnight courier service addressed to each Holder at the email address or facsimile number or other address of such Holder appearing on the books of the Corporation, or if no such email address or facsimile number or other address appears on the books of the Corporation, at the principal place of business of such Holder, as set forth in the Purchase Agreement. Any notice or other communication or deliveries hereunder shall be deemed given and effective on the earliest of (i) the date of transmission, if such notice or communication is delivered via email or facsimile at the email address or facsimile number, as applicable, set forth in this Section 8 prior to 5:30 p.m. (New York City time) on any date, (ii) the next Trading Day after the date of transmission, if such notice or communication is delivered via email or facsimile at the email address or facsimile number, as applicable, set forth in this Section 8 on a day that is not a Trading Day or later than 5:30 p.m. (New York City time) on any Trading Day, (iii) the second Trading Day following the date of mailing, if sent by U.S. nationally recognized overnight courier service, or (iv) upon actual receipt by the party to whom such notice is required to be given.

b) Absolute Obligation. Except as expressly provided herein, no provision of this Certificate of Designation shall alter or impair the obligation of the Corporation, which is absolute and unconditional, to pay liquidated damages and accrued dividends, as applicable, on the shares of Preferred Stock at the time, place, and rate, and in the coin or currency, herein prescribed.

c) Lost or Mutilated Preferred Stock Certificate. If a Holder's Preferred Stock certificate shall be mutilated, lost, stolen or destroyed, the Corporation shall execute and deliver, in exchange and substitution for and upon cancellation of a mutilated certificate, or in lieu of or in substitution for a lost, stolen or destroyed certificate, a new certificate for the shares of Preferred Stock so mutilated, lost, stolen or destroyed, but only upon receipt of evidence of such loss, theft or destruction of such certificate, and of the ownership hereof reasonably satisfactory to the Corporation.

d) Governing Law. All questions concerning the construction, validity, enforcement and interpretation of this Certificate of Designation shall be governed by and construed and enforced in accordance with the internal laws of the State of Delaware, without regard to the principles of conflict of laws thereof. Each party, to the extent that it may lawfully do so, hereby consents to service of process, and to be sued, in any state or federal court located in the State of Delaware, as well as to the jurisdiction of all courts to which an appeal may be taken from such courts, for the purpose of any suit, action or other proceeding arising out of any of its obligations hereunder or with respect to the transactions contemplated hereby, and expressly waives any and all objections it may have as to venue in any such courts. Each party further agrees that a summons and complaint commencing an action or proceeding in any of such courts shall be properly served and shall confer personal jurisdiction if served personally or by certified mail to it in accordance with Section 21 hereof or as otherwise provided under the laws of Delaware. EACH PARTY IRREVOCABLY WAIVES ALL RIGHT TO A TRIAL BY JURY IN ANY SUIT, ACTION OR OTHER PROCEEDING INSTITUTED BY OR AGAINST SUCH PARTY IN RESPECT OF ITS OBLIGATIONS HEREUNDER OR THE TRANSACTIONS CONTEMPLATED HEREBY. If any party shall commence an action or proceeding to enforce any provisions of this Certificate of Designation, then the prevailing party in such action or proceeding shall be reimbursed by the other party for its attorneys' fees and other costs and expenses incurred in the investigation, preparation and prosecution of such action or proceeding.

e) Waiver. Any waiver by the Corporation or a Holder of a breach of any provision of this Certificate of Designation shall not operate as or be construed to be a waiver of any other breach of such provision or of any breach of any other provision of this Certificate of Designation or a waiver by any other Holders. The failure of the Corporation or a Holder to insist upon strict adherence to any term of this Certificate of Designation on one or more occasions shall not be considered a waiver or deprive that party (or any other Holder) of the right thereafter to insist upon strict adherence to that term or any other term of this Certificate of Designation on any other occasion. Any waiver by the Corporation or a Holder must be in writing.

f) Severability. If any provision of this Certificate of Designation is invalid, illegal or unenforceable, the balance of this Certificate of Designation shall remain in effect, and if any provision is inapplicable to any Person or circumstance, it shall nevertheless remain applicable to all other Persons and circumstances. If it shall be found that any interest or other amount deemed interest due hereunder violates the applicable law governing usury, the applicable rate of interest due hereunder shall automatically be lowered to equal the maximum rate of interest permitted under applicable law.

g) Next Business Day. Whenever any payment or other obligation hereunder shall be due on a day other than a Business Day, such payment shall be made on the next succeeding Business Day.

h) Headings. The headings contained herein are for convenience only, do not constitute a part of this Certificate of Designation and shall not be deemed to limit or affect any of the provisions hereof.

i) Status of Converted or Redeemed Preferred Stock. Shares of Preferred Stock may only be issued upon conversion of the Notes (as defined in the Purchase Agreement) pursuant to the terms thereof. If any shares of Preferred Stock shall be converted, redeemed or reacquired by the Corporation, such shares shall resume the status of authorized but unissued shares of preferred stock and shall no longer be designated as Series B Convertible Preferred Stock.

RESOLVED, FURTHER, that the undersigned officer of the Corporation be and hereby is authorized and directed to prepare and file this Certificate of Designation of Preferences, Rights and Limitations in accordance with the foregoing resolution and the provisions of Delaware law.

IN WITNESS WHEREOF, the undersigned have executed this Certificate this ____ day of _____ 2017.

Name: Timothy C. Dec
Title: Chief Financial Officer

ANNEX A

NOTICE OF CONVERSION

(TO BE EXECUTED BY THE REGISTERED HOLDER IN ORDER TO CONVERT SHARES OF PREFERRED STOCK)

The undersigned hereby elects to convert the number of shares of Series B Convertible Preferred Stock indicated below into shares of common stock, par value \$0.01 per share (the "Common Stock"), of OpGen, Inc., a Delaware corporation (the "Corporation"), according to the conditions hereof, as of the date written below. If shares of Common Stock are to be issued in the name of a Person other than the undersigned, the undersigned will pay all transfer taxes payable with respect thereto and is delivering herewith such certificates and opinions as may be required by the Corporation in accordance with the Purchase Agreement. No fee will be charged to the Holders for any conversion, except for any such transfer taxes.

Conversion calculations:

Date to Effect Conversion: _____

Number of shares of Preferred Stock owned prior to Conversion: _____

Number of shares of Preferred Stock to be Converted: _____

Stated Value of shares of Preferred Stock to be Converted: _____

Applicable Conversion Price: _____

Number of shares of Common Stock to be Issued: _____

Number of shares of Preferred Stock owned subsequent to Conversion: _____

Address for Delivery: _____

or

DWAC Instructions:

Broker no: _____

Account no: _____

[HOLDER]

By: _____

Name:

Title:

NEITHER THIS SECURITY NOR THE SECURITIES FOR WHICH THIS SECURITY IS EXERCISABLE HAVE BEEN REGISTERED WITH THE SECURITIES AND EXCHANGE COMMISSION OR THE SECURITIES COMMISSION OF ANY STATE. THIS SECURITY HAS BEEN, AND THE SECURITIES FOR WHICH THIS SECURITY IS EXERCISED MAY BE, ISSUED IN RELIANCE UPON AN EXEMPTION OR EXEMPTIONS FROM REGISTRATION UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), AND, IN EACH SUCH CASE, MAY NOT BE OFFERED OR SOLD EXCEPT PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT OR PURSUANT TO AN AVAILABLE EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN ACCORDANCE WITH APPLICABLE STATE SECURITIES LAWS. THIS SECURITY AND THE SECURITIES ISSUABLE UPON EXERCISE OF THIS SECURITY MAY BE PLEDGED IN CONNECTION WITH A BONA FIDE MARGIN ACCOUNT OR OTHER LOAN SECURED BY SUCH SECURITIES.

OPGEN, INC.

WARRANT TO PURCHASE COMMON STOCK

Warrant No.:
 Number of Shares of Common Stock
 Date of Issuance: _____ ("**Issuance Date**")

OpGen, Inc., a company organized under the laws of Delaware (the "**Company**"), hereby certifies that, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, _____, the registered holder hereof or its permitted assigns (the "**Holder**"), is entitled, subject to the terms set forth below, to purchase from the Company, at the Exercise Price (as defined below) then in effect, upon surrender of this Warrant to Purchase Common Stock (including any Warrants to Purchase Common Stock issued in exchange, transfer or replacement hereof, the "**Warrant**"), at any time or times on or after the Initial Exercisability Date (as defined below), but not after 11:59 p.m., New York time, on the Expiration Date (as defined below), _____ fully paid non-assessable shares of Common Stock, par value \$0.01 per share, subject to adjustment as provided herein (the "**Warrant Shares**"). Except as otherwise defined herein, capitalized terms in this Warrant shall have the meanings set forth in Section 20. [This Warrant is issued pursuant to that certain Note Purchase Agreement, dated May 31, 2017, by and among the Company and jVen Capital, a Delaware limited liability company (the "**Note Purchase Agreement**").] [This Warrant is issued pursuant to that certain Second Amended and Restated Senior Secured Promissory Note, dated as of June __ 2017, by and among the Company and Merck Global Health Innovation Fund, LLC, a Delaware limited liability company (the "**A&R Note**").]

1. EXERCISE OF WARRANT.

(a) Mechanics of Exercise. This Warrant may be exercised by the Holder at any time or times on or after the Initial Exercisability Date and on or before the Expiration Date, in whole or in part, by (i) delivery (whether via facsimile, electronic mail or otherwise) of a written notice, in the form attached hereto as Exhibit A (the "**Exercise Notice**"), of the Holder's election to exercise this Warrant and (ii) (A) payment to the Company of an amount equal to the applicable Exercise Price multiplied by the number of Warrant Shares as to which this Warrant is being exercised (the "**Aggregate Exercise Price**") in cash or by wire transfer of immediately available funds or (B) by notifying the Company that this Warrant is being exercised pursuant to a Cashless Exercise (as defined in Section 1(f)). The Holder shall not be required to deliver the original Warrant in order to effect an exercise hereunder nor shall any ink-original signature or medallion guarantee (or other type of guarantee or notarization) with respect to any Exercise Notice be required. Execution and delivery of the Exercise Notice with respect to less than all of the Warrant Shares shall have the same effect as cancellation of the original Warrant and issuance of a new Warrant evidencing the right to purchase the remaining number of Warrant Shares. On or before the first (1st) Trading Day following the date on which the Company has received the applicable Exercise Notice, the Company shall transmit by facsimile or electronic mail an acknowledgment of confirmation of receipt of the Exercise Notice, in the form attached to the Exercise Notice, to the Holder and the Company's transfer agent (the "**Transfer Agent**"). So long as the Holder delivers the Aggregate Exercise Price (or notice of a Cashless Exercise) on or prior to the second (2nd) Trading Day following the date on which the Exercise Notice has been delivered to the Company, then on or prior to the third (3rd) Trading Day following the date on which the Exercise Notice has been delivered to the Company, or, if the Holder does not deliver the Aggregate Exercise Price (or notice of a Cashless Exercise) on or prior to the second (2nd) Trading Day following the date on which the Exercise Notice has been delivered to the Company, then on or prior to the second (2nd) Trading Day following the date on which the Aggregate Exercise Price (or notice of a Cashless Exercise) is delivered (the "**Share Delivery Date**"), the Company shall (X) provided that the Transfer Agent is participating in The Depository Trust Company ("**DTC**") Fast Automated Securities Transfer Program, upon the request of the Holder, credit such aggregate number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the Holder's or its designee's balance account with DTC through its Deposit/Withdrawal At Custodian system, or (Y) if (i) the Transfer Agent is not participating in the DTC Fast Automated Securities Transfer Program or (ii) the shares to be issued have not been registered under the Securities Act or are not freely transferable without restriction or limitation pursuant to Rule 144 under the Securities Act, issue and dispatch by overnight courier to the address as specified in the Exercise Notice, a certificate, registered in the Company's share register in the name of the Holder or its designee, for the number of shares of Common Stock to which the Holder is entitled pursuant to such exercise. The Company shall be responsible for all fees and expenses of the Transfer Agent and all fees and expenses with respect to the issuance of Warrant Shares via DTC, if any, including without limitation for same day processing. Upon delivery of the Exercise Notice, the Holder shall be deemed for all corporate purposes to have become the holder of record of the Warrant Shares with respect to which this Warrant has been exercised, irrespective of the date such Warrant Shares are credited to the Holder's DTC account or the date of delivery of the certificates evidencing such Warrant Shares, as the case may be; provided payment of the Aggregate Exercise Price (other than in the case of a Cashless Exercise) is received within three Trading Days of delivery of the Exercise Notice. If this Warrant is submitted in connection with any exercise pursuant to this Section 1(a) and the number of Warrant Shares represented by this Warrant submitted for exercise is greater than the number of Warrant Shares being acquired upon an exercise, then the Company shall as soon as practicable and in no event later than three (3) Trading Days after any exercise and at its own expense, issue a new Warrant (in accordance with Section 7(d)) representing the right to purchase the number of Warrant Shares issuable immediately prior to such exercise under this Warrant, less the number of Warrant Shares with respect to which this Warrant is exercised.

(b) No Fractional Shares. No fractional shares of Common Stock or scrip representing fractional shares are to be issued upon the exercise of this Warrant, but rather the number of shares of Common Stock to be issued shall be rounded up to the nearest whole number.

(c) Charges, Taxes and Expenses. Issuance of Warrant Shares shall be made without charge to the holder for any issue or transfer tax or other incidental expense in respect of the issuance of such Warrant Shares, all of which taxes and expenses shall be paid by the Company, and such Warrant Shares shall be issued in the name of the holder or in such name or names as may be directed by the holder; *provided, however*, that in the event that Warrant Shares are to be issued in a name other than the name of the holder, this Warrant when surrendered for exercise shall be accompanied by the Assignment Form attached hereto as Exhibit B duly executed by the holder and the Company may require, as a condition thereto, the payment of a sum sufficient to reimburse it for any transfer tax incidental thereto. The Company shall pay all Transfer Agent fees required for same-day processing of any Exercise Notice and all fees to the Depository Trust Company (or another established clearing corporation performing similar functions) required for same-day electronic delivery of the Warrant Shares.

(d) Exercise Price. For purposes of this Warrant, "**Exercise Price**" means \$_____ per share, which shall be a price that is at a 10% premium to the Closing Bid Price per share on the trading date immediately preceding the Issuance Date, subject to adjustment as provided herein.

(e) Company's Failure to Timely Deliver Securities. In addition to any other rights available to Holder, if, within three (3) Trading Days after the Company's receipt of the Exercise Notice and the Aggregate Exercise Price (or notice of Cashless Exercise), the Company shall fail to issue and deliver a certificate without restrictive legend to the Holder and register such shares of Common Stock on the Company's share register or credit the Holder's balance account with DTC for the number of shares of Common Stock to which the Holder is entitled upon the Holder's exercise hereunder or pursuant to the Company's obligation pursuant to clause (ii) below, and if on or after such Trading Day the Holder purchases (in an open market transaction or otherwise) shares of Common Stock to deliver in satisfaction of a sale by the Holder of shares of Common Stock issuable upon such exercise that the Holder anticipated receiving from the Company (a "**Buy-In**"), then, in addition to all other remedies available to the Holder, the Company shall, within three (3) Trading Days after the Holder's request and in the Holder's discretion, either (i) pay cash to the Holder in an amount equal to the Holder's total purchase price (including brokerage commissions and other reasonable out-of-pocket expenses, if any) for the shares of Common Stock so purchased (the "**Buy-In Price**"), at which point the Company's obligation to deliver such certificate (and to issue such shares of Common Stock) or credit such Holder's balance account with DTC shall terminate, or (ii) promptly honor its obligation to deliver to the Holder a certificate or certificates representing such shares of Common Stock or credit such Holder's balance account with DTC and pay cash to the Holder in an amount equal to the excess (if any) of the Buy-In Price over the product of (A) such number of shares of Common Stock, times (B) any trading price of the Common Stock selected by the Holder in writing as in effect at any time during the period beginning on the applicable Exercise Date and ending on the applicable Share Delivery Date. In addition to the foregoing, if the Company fails for any reason to deliver to the Holder the Warrant Shares subject to an Exercise Notice by the Share Delivery Date, the Company shall pay to the Holder, in cash, as partial liquidated damages and not as a penalty, for each Trading Day that the Warrant Shares are not delivered until such delivery is made or the Holder rescinds the exercise, 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 Share Delivery Date, per Trading Day for each Trading Day after such Share Delivery Date until such shares of Common Stock are delivered to the Holder or the Holder rescinds such exercise at any time prior to the issuance of the Warrant Shares. The foregoing shall be without prejudice to any other rights and recourses of Holder in connection with the failure of the Company to deliver and register the shares as aforesaid.

(f) Cashless Exercise. Notwithstanding anything contained herein to the contrary, if a registration statement (as described in the Registration Rights Agreement) covering the resale of the Warrant Shares that are the subject of the Exercise Notice pursuant to the Securities Act (the "Unavailable Warrant Shares") is not available for the resale of such Unavailable Warrant Shares, the Holder may, in its sole discretion (and without limiting the Holder's rights and remedies contained herein or in [any of the other Transaction Documents (as defined in the Note Purchase Agreement)] [the A&R Note or the other agreements or instruments entered into or benefitting the Holder in connection therewith], exercise this Warrant in whole or in part and, in lieu of making the cash payment otherwise contemplated to be made to the Company upon such exercise in payment of the Aggregate Exercise Price, elect instead to receive upon such exercise the "Net Number" of shares of Common Stock determined according to the following formula (a "Cashless Exercise"):

$$\text{Net Number} = \frac{(A \times B) - (A \times C)}{B}$$

For purposes of the foregoing formula:

A= the total number of shares with respect to which this Warrant is then being exercised.

B= the last VWAP immediately preceding the time of delivery of the Notice of Exercise giving rise to the applicable "cashless exercise", as set forth in the applicable Exercise Notice (to clarify, the "last VWAP" will be the last VWAP as calculated over an entire Trading Day such that, in the event that this Warrant is exercised at a time that the Trading Market is open, the prior Trading Day's VWAP shall be used in this calculation).

C= the Exercise Price then in effect for the applicable Warrant Shares at the time of such exercise.

"**VWAP**" means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on a Trading Market, the daily volume weighted average price of the Common Stock for such date (or the nearest preceding date) on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if OTCQB or OTCQX is not a Trading Market, the volume weighted average price of the Common Stock for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the Common Stock is not then listed or quoted for trading on OTCQB or OTCQX and if prices for the Common Stock are then reported in the "Pink Sheets" published by OTC Markets Group, Inc. (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the Common Stock so reported, or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by the Holder and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

If Warrant Shares are issued in such a cashless exercise, the parties acknowledge and agree that in accordance with Section 3(a)(9) of the Securities Act, the Warrant Shares shall take on the characteristics of the Warrants being exercised, and the holding period of the Warrant Shares being issued may be tacked on to the holding period of this Warrant. The Company agrees not to take any position contrary to this Section 1(f).

(g) Rescission Rights. If the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares pursuant to Section 1(a) by the Share Delivery Date, then the Holder will have the right to rescind such exercise provided that such rescission shall not affect the Company's obligations to make any payments pursuant to Section 1(e) which have accrued prior to the date of such rescission.

(h) Disputes. In the case of a dispute as to the determination of the Exercise Price or the arithmetic calculation of the Warrant Shares, the Company shall promptly issue to the Holder the number of Warrant Shares that are not disputed and resolve such dispute in accordance with Section 14.

(i) [RESERVED][Principal Market Regulation. Notwithstanding anything to the contrary contained herein, the Company shall not effect the exercise of any portion of this Warrant, and a Holder shall not have the right to exercise any portion of this Warrant, to the extent that, after giving effect to the exercise set forth on the applicable Exercise Notice, such exercise would result in (i) the issuance of Common Stock equal to 20% or more of the Common Stock or 20% or more of the voting power outstanding before such exercise for less than the greater of book or market value of the stock in violation of Nasdaq Stock Market Rule 5635(d) or (ii) a change of control for purposes of Nasdaq Stock Market Rule 5635(b), in each case, unless stockholder approval of such issuance has previously been obtained in accordance with the rules of the Nasdaq Stock Market. The determination of the applicability of the limitation contained in this Section 1(i) shall be in the sole discretion of the Company and shall be made by the Company in accordance with the rules and regulations of the Nasdaq Stock Market. For purposes of clarity, the shares of Common Stock issuable pursuant to the terms of this Warrant in excess of the amounts set forth in this paragraph shall not be deemed to be beneficially owned by the Holder for any purpose including for purposes of Section 13(d) or Rule 16a-1(a)(1) of the 1934 Act. No prior inability to exercise this Warrant pursuant to this paragraph shall have any effect on the applicability of the provisions of this paragraph with respect to any subsequent determination of exercisability. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 1(i) to the extent necessary to correct this paragraph or any portion of this paragraph which may be defective or inconsistent with the intended beneficial ownership limitation contained in this Section 1(i) or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitation contained in this paragraph may not be waived and shall apply to a successor holder of this Warrant.]

(j) Reservation of Warrant Shares. The Company covenants that it will at all times reserve and keep available out of the aggregate of its authorized but unissued and otherwise unreserved Common Stock, solely for the purpose of enabling it to issue Warrant Shares upon exercise of this Warrant as herein provided, the number of Warrant Shares which are then issuable and deliverable upon the exercise of this entire Warrant, free from preemptive rights or any other contingent purchase rights of persons other than the Holder (after giving effect to the adjustments and restrictions of Section 2, if any). The Company covenants that all Warrant Shares so issuable and deliverable shall, upon issuance and the payment of the applicable Exercise Price in accordance with the terms hereof, be duly and validly authorized, issued and fully paid and non-assessable and free from all taxes, liens and charges created by the Company in respect of the issue thereof (other than taxes in respect of any transfer occurring contemporaneously with such issue). The Company will take all such action as may be necessary to assure that such shares of Common Stock may be issued as provided herein without violation of any applicable law or regulation, or of any requirements of any securities exchange or automated quotation system upon which the Common Stock may be listed.

(k) Voluntary Adjustment By Company. The Company may at any time during the term of this Warrant reduce the then current Exercise Price to any amount and for any period of time deemed appropriate by the Board of Directors of the Company.

2. ADJUSTMENT OF EXERCISE PRICE AND NUMBER OF WARRANT SHARES UPON SUBDIVISION OR COMBINATION OF SHARES OF COMMON STOCK. If the Company at any time on or after the Issuance Date subdivides (by any stock split, stock dividend, recapitalization or otherwise) one or more classes of its outstanding shares of Common Stock into a greater number of shares, the Exercise Price in effect immediately prior to such subdivision will be proportionately reduced and the number of Warrant Shares will be proportionately increased. If the Company at any time on or after the Issuance Date combines (by combination, reverse stock split or otherwise) one or more classes of its outstanding shares of Common Stock into a smaller number of shares, the Exercise Price in effect immediately prior to such combination will be proportionately increased and the number of Warrant Shares will be proportionately decreased. Any adjustment under this Section 2 shall become effective at the close of business on the date the subdivision or combination becomes effective.

3. RIGHTS UPON DISTRIBUTION OF ASSETS. In addition to any adjustments pursuant to Section 2 above, if, on or after the Issuance Date and on or prior to the Expiration Date, the Company shall declare or make any dividend or other distribution of its assets (or rights to acquire its assets) to holders of shares of Common Stock, by way of return of capital or otherwise (including, without limitation, any distribution of cash, stock or other securities, property, options, evidence of indebtedness or any other assets by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a "**Distribution**"), at any time after the issuance of this Warrant, then, in each such case, the Holder shall be entitled to participate in such Distribution to the same extent that the Holder would have participated therein if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations or restrictions on exercise of this Warrant, including without limitation, the Maximum Percentage) immediately before the date of which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the participation in such Distribution (provided, however, that to the extent that the Holder's right to participate in any such Distribution would result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, then the Holder shall not be entitled to participate in such Distribution to such extent (and shall not be entitled to beneficial ownership of such shares of Common Stock as a result of such Distribution (and beneficial ownership) to such extent) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time or times as its right thereto would not result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, at which time or times the Holder shall be granted such Distribution (and any Distributions declared or made on such initial Distribution or on any subsequent Distribution held similarly in abeyance) to the same extent as if there had been no such limitation).

4. PURCHASE RIGHTS; FUNDAMENTAL TRANSACTIONS; CHANGE OF CONTROL.

(a) Purchase Rights. In addition to any adjustments pursuant to Section 2 above, if at any time on or after the Issuance Date and on or prior to the Expiration Date the Company grants, issues or sells any Options, Convertible Securities or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of Common Stock (the "**Purchase Rights**"), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations or restrictions on exercise of this Warrant, including without limitation, the Maximum Percentage) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of Common Stock are to be determined for the grant, issuance or sale of such Purchase Rights (provided, however, that to the extent that the Holder's right to participate in any such Purchase Right would result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, then the Holder shall not be entitled to participate in such Purchase Right to such extent (and shall not be entitled to beneficial ownership of such Common Stock as a result of such Purchase Right (and beneficial ownership) to such extent) and such Purchase Right to such extent shall be held in abeyance for the benefit of the Holder until such time or times as its right thereto would not result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, at which time or times the Holder shall be granted such right (and any Purchase Right granted, issued or sold on such initial Purchase Right or on any subsequent Purchase Right to be held similarly in abeyance) to the same extent as if there had been no such limitation).

(b) Fundamental Transactions. The Company shall not enter into or be party to a Fundamental Transaction unless the Successor Entity assumes in writing all of the obligations of the Company under this Warrant and the other Transaction Documents (as defined in the Note Purchase Agreement) in accordance with the provisions of this Section 4(b), including agreements to deliver to each holder of the Warrants in exchange for such Warrants a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Warrant, including, without limitation, an adjusted exercise price equal to the value for the shares of Common Stock reflected by the terms of such Fundamental Transaction, and exercisable for a corresponding number of shares of capital stock equivalent to the shares of Common Stock acquirable and receivable upon exercise of this Warrant (without regard to any limitations on the exercise of this Warrant) prior to such Fundamental Transaction. Upon the occurrence of any Fundamental Transaction, the Successor Entity shall succeed to, and be substituted for (so that from and after the date of such Fundamental Transaction, the provisions of this Warrant referring to the "Company" shall refer instead to the Successor Entity), and may exercise every right and power of the Company and shall assume all of the obligations of the Company under this Warrant with the same effect as if such Successor Entity had been named as the Company herein. Upon consummation of the Fundamental Transaction, the Successor Entity shall deliver to the Holder confirmation that there shall be issued upon exercise of this Warrant at any time after the consummation of the Fundamental Transaction, in lieu of the shares of Common Stock (or other securities, cash, assets or other property) issuable upon the exercise of the Warrant prior to such Fundamental Transaction, such shares of the publicly traded common stock or common shares (or its equivalent) of the Successor Entity (including its Parent Entity) which the Holder would have been entitled to receive upon the happening of such Fundamental Transaction had this Warrant been converted immediately prior to such Fundamental Transaction, as adjusted in accordance with the provisions of this Warrant. In addition to and not in substitution for any other rights hereunder, prior to the consummation of any Fundamental Transaction pursuant to which holders of shares of Common Stock are entitled to receive securities or other assets with respect to or in exchange for shares of Common Stock (a "**Corporate Event**"), the Company shall make appropriate provision to insure that the Holder will thereafter have the right to receive upon an exercise of this Warrant at any time after the consummation of the Corporate Event but prior to the Expiration Date, in lieu of shares of Common Stock (or other securities, cash, assets or other property) purchasable upon the exercise of this Warrant prior to such Corporate Event, such shares of stock, securities, cash, assets or any other property whatsoever (including warrants or other purchase or subscription rights) which the Holder would have been entitled to receive upon the happening of such Corporate Event had this Warrant been exercised immediately prior to such Corporate Event. The provisions of this Section shall apply similarly and equally to successive Fundamental Transactions and Corporate Events and shall be applied without regard to any limitations on the exercise of this Warrant. Notwithstanding anything to the contrary, in the event of a Fundamental Transaction, the Company or any Successor Entity shall, at the Holder's option, exercisable at any time concurrently with, or within 30 days after, the consummation of the Fundamental Transaction, purchase this Warrant from the Holder by paying to the Holder an amount of cash equal to the Black Scholes Value of the remaining unexercised portion of this Warrant on the effective date of the Fundamental Transaction. "**Black Scholes Value**" means the value of the unexercised portion of the Warrant remaining on the effective date of the Fundamental Transaction which value is calculated using the Black Scholes Option Pricing Model obtained from the "OV" function on Bloomberg, L.P. utilizing (i) an underlying price per share equal to the greater of (1) the Closing Sale Price on the Trading Day immediately following the public disclosure of the applicable Fundamental Transaction and (2) the sum of the price per share being offered in cash in the applicable Fundamental Transaction (if any) plus the value of the non-cash consideration being offered in the applicable Fundamental Transaction (if any), (ii) a strike price equal to the exercise price in effect on the effective date of the Fundamental Transaction, (iii) a risk-free interest rate corresponding to the U.S. Treasury rate for a period equal to the remaining term of the Warrant as of the Trading Day immediately following the public disclosure of the applicable Fundamental Transaction, (iv) a zero cost of borrow, (v) a remaining option time equal to the time between the Trading Day immediately following the public disclosure of the applicable Fundamental Transaction and the Expiration Date and (vi) an expected volatility equal to the greater of 60% and the 90 day volatility obtained from the "HVT" function on Bloomberg, L.P. (determined utilizing a 365 day annualization factor) as of the Trading Day immediately following the public disclosure of the applicable Fundamental Transaction.

(c) Change of Control. Notwithstanding the foregoing, in the event of a Change of Control other than one in which a Successor Entity that is a publicly traded corporation whose stock is quoted or listed for trading on an Eligible Market assumes this Warrant such that the Warrant shall be exercisable for the publicly traded common stock of such Successor Entity, at the request of the Holder delivered before the ninetieth (90th) day after the consummation of such Change of Control, the Company (or the Successor Entity) shall purchase this Warrant from the Holder by paying to the Holder, within five (5) Business Days after such request (or, if later, on the effective date of the Fundamental Transaction), cash in an amount equal to the Black Scholes Value of the remaining unexercised portion of this Warrant on the date of such Change of Control.

5. NONCIRCUMVENTION. The Company hereby covenants and agrees that the Company will not, by amendment of its governing documents, or through any reorganization, transfer of assets, consolidation, merger, scheme of arrangement, dissolution, issue or sale of securities, or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, and will at all times in good faith carry out all the provisions of this Warrant and take all action as may be required to protect the rights of the Holder. Without limiting the generality of the foregoing, the Company (i) shall not increase the par value of any shares of Common Stock receivable upon the exercise of this Warrant above the Exercise Price then in effect, (ii) shall take all such actions as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and non-assessable shares of Common Stock upon the exercise of this Warrant, and (iii) shall, so long as any of the Warrants are outstanding, take all action necessary to reserve and keep available out of its authorized and unissued shares of Common Stock, solely for the purpose of effecting the exercise of the Warrants, the number of shares of Common Stock as shall from time to time be necessary to effect the exercise of the Warrants then outstanding (without regard to any limitations on exercise). The Company will not close its stockholder books or records in any manner which prevents the timely exercise of this Warrant, pursuant to the terms hereof.

6. WARRANT HOLDER NOT DEEMED A STOCKHOLDER. Except as otherwise specifically provided herein, the Holder, solely in such Person's capacity as a holder of this Warrant, shall not be entitled to vote or receive dividends or be deemed the holder of share capital of the Company for any purpose, nor shall anything contained in this Warrant be construed to confer upon the Holder, solely in such Person's capacity as the Holder of this Warrant, any of the rights of a stockholder of the Company or any right to vote, give or withhold consent to any corporate action (whether any reorganization, issue of stock, reclassification of stock, consolidation, merger, conveyance or otherwise), receive notice of meetings, receive dividends or subscription rights, or otherwise, prior to the issuance to the Holder of the Warrant Shares which such Person is then entitled to receive upon the due exercise of this Warrant. In addition, nothing contained in this Warrant shall be construed as imposing any liabilities on the Holder to purchase any securities (upon exercise of this Warrant or otherwise) or as a stockholder of the Company, whether such liabilities are asserted by the Company or by creditors of the Company. Notwithstanding this Section 6, the Company shall provide the Holder with copies of the same notices and other information given to the stockholders of the Company generally, contemporaneously with the giving thereof to the stockholders, unless such notices or other information is contained in the SEC Reports.

7. REISSUANCE OF WARRANTS.

(a) Transfer of Warrant. If this Warrant is to be transferred, the Holder shall surrender this Warrant to the Company, whereupon the Company will forthwith issue and deliver upon the order of the Holder a new Warrant (in accordance with Section 7(d)), registered as the Holder may request, representing the right to purchase the number of Warrant Shares being transferred by the Holder and, if less than the total number of Warrant Shares then underlying this Warrant is being transferred, a new Warrant (in accordance with Section 7(d)) to the Holder representing the right to purchase the number of Warrant Shares not being transferred.

(b) Lost, Stolen or Mutilated Warrant. Upon receipt by the Company of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant, and, in the case of loss, theft or destruction, of any indemnification undertaking by the Holder to the Company in customary form and, in the case of mutilation, upon surrender and cancellation of this Warrant, the Company shall execute and deliver to the Holder a new Warrant (in accordance with Section 7(d)) representing the right to purchase the Warrant Shares then underlying this Warrant.

(c) Exchangeable for Multiple Warrants. This Warrant is exchangeable, upon the surrender hereof by the Holder at the principal office of the Company, for a new Warrant or Warrants (in accordance with Section 7(d)) representing in the aggregate the right to purchase the number of Warrant Shares then underlying this Warrant, and each such new Warrant will represent the right to purchase such portion of such Warrant Shares as is designated by the Holder at the time of such surrender.

(d) Issuance of New Warrants. Whenever the Company is required to issue a new Warrant pursuant to the terms of this Warrant, such new Warrant (i) shall be of like tenor with this Warrant, (ii) shall represent, as indicated on the face of such new Warrant, the right to purchase the Warrant Shares then underlying this Warrant (or in the case of a new Warrant being issued pursuant to Section 7(a) or Section 7(c), the Warrant Shares designated by the Holder which, when added to the number of shares of Common Stock underlying the other new Warrants issued in connection with such issuance, does not exceed the number of Warrant Shares then underlying this Warrant), (iii) shall have an issuance date, as indicated on the face of such new Warrant which is the same as the Issuance Date, and (iv) shall have the same rights and conditions as this Warrant.

8. NOTICES. Whenever notice is required to be given under this Warrant, unless otherwise provided herein, such notice shall be given in accordance with [Section 6.6 of the Note Purchase Agreement] [the A&R Note]. The Company shall provide the Holder with prompt written notice of all actions taken pursuant to this Warrant, including in reasonable detail a description of such action and the reason therefor. Without limiting the generality of the foregoing, the Company will give written notice to the Holder (i) immediately upon any adjustment of the Exercise Price, setting forth in reasonable detail, and certifying, the calculation of such adjustment and (ii) at least fifteen (15) days prior to the date on which the Company closes its books or takes a record (A) with respect to any dividend or distribution upon the shares of Common Stock, (B) with respect to any grants, issuances or sales of Purchase Rights or (C) for determining rights to vote with respect to any Fundamental Transaction, dissolution or liquidation, provided in each case that such information shall be made known to the public prior to or in conjunction with such notice being provided to the Holder.

9. AMENDMENT AND WAIVER. Except as otherwise provided herein, the provisions of this Warrant may be amended and the Company may take any action herein prohibited, or omit to perform any act herein required to be performed by it, only if the Company has obtained the written consent of the Holder; provided that no such action may increase the exercise price of this Warrant or decrease the number of shares or class of stock obtainable upon exercise of this Warrant without the written consent of the Holder.

10. NONWAIVER AND EXPENSES. No course of dealing or any delay or failure to exercise any right hereunder on the part of Holder shall operate as a waiver of such right or otherwise prejudice the Holder's rights, powers or remedies, notwithstanding the fact that all rights hereunder terminate on the Termination Date. If the Company willfully and knowingly fails to comply with any provision of this Warrant, which results in any material damages to the Holder, the Company shall pay to the Holder such amounts as shall be sufficient to cover any costs and expenses including, but not limited to, reasonable attorneys' fees, including those of appellate proceedings, incurred by the Holder in collecting any amounts due pursuant hereto or in otherwise enforcing any of its rights, powers or remedies hereunder.

11. LIMITATION OF LIABILITY. No provision hereof, in the absence of any affirmative action by the Holder to exercise this Warrant to purchase Warrant Shares, and no enumeration herein of the rights or privileges of the Holder, shall give rise to any liability of the Holder for the purchase price of any Common Stock or as a stockholder of the Company, whether such liability is asserted by the Company or by creditors of the Company.

12. GOVERNING LAW. This Warrant shall be governed by and construed and enforced in accordance with, and all questions concerning the construction, validity, interpretation and performance of this Warrant shall be governed by, the internal laws of the State of New York, without giving effect to any choice of law or conflict of law provision or rule (whether of the State of New York or any other jurisdictions) that would cause the application of the laws of any jurisdictions other than the State of New York. The Company hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in The City of New York, Borough of Manhattan, for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or proceeding is brought in an inconvenient forum or that the venue of such suit, action or proceeding is improper. The Company hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof to the Company at the address set forth in Section 8(i) above or such other address as the Company subsequently delivers to the Holder and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law. Nothing contained herein shall be deemed or operate to preclude the Holder from bringing suit or taking other legal action against the Company in any other jurisdiction to collect on the Company's obligations to the Holder, to realize on any collateral or any other security for such obligations, or to enforce a judgment or other court ruling in favor of the Holder. **THE COMPANY HEREBY IRREVOCABLY WAIVES ANY RIGHT IT MAY HAVE, AND AGREES NOT TO REQUEST, A JURY TRIAL FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION WITH OR ARISING OUT OF THIS WARRANT OR ANY TRANSACTION CONTEMPLATED HEREBY.**

13. CONSTRUCTION; HEADINGS. This Warrant shall be deemed to be jointly drafted by the Company and the Holder and shall not be construed against any person as the drafter hereof. The headings of this Warrant are for convenience of reference and shall not form part of, or affect the interpretation of, this Warrant.

14. DISPUTE RESOLUTION. In the case of a dispute as to the determination of the Exercise Price or the arithmetic calculation of the Warrant Shares, the Company shall submit the disputed determinations or arithmetic calculations via facsimile or electronic mail within two (2) Business Days of receipt of the Exercise Notice giving rise to such dispute, as the case may be, to the Holder. If the Holder and the Company are unable to agree upon such determination or calculation of the Exercise Price or the Warrant Shares within three (3) Business Days of such disputed determination or arithmetic calculation being submitted to the Holder, then the Company shall, within two (2) Business Days submit via facsimile or electronic mail (a) the disputed determination of the Exercise Price to an independent, reputable investment bank selected by the Company and approved by the Holder or (b) the disputed arithmetic calculation of the Warrant Shares to the Company's independent, outside accountant. The Company shall cause at its expense the investment bank or the accountant, as the case may be, to perform the determinations or calculations and notify the Company and the Holder of the results no later than ten Business Days from the time it receives the disputed determinations or calculations. Such investment bank's or accountant's determination or calculation, as the case may be, shall be binding upon all parties absent demonstrable error.

15. REMEDIES, OTHER OBLIGATIONS, BREACHES AND INJUNCTIVE RELIEF. The remedies provided in this Warrant shall be cumulative and in addition to all other remedies available under this Warrant and the other Transaction Documents, at law or in equity (including a decree of specific performance and/or other injunctive relief), and nothing herein shall limit the right of the Holder to pursue actual damages for any failure by the Company to comply with the terms of this Warrant. The Company acknowledges that a breach by it of its obligations hereunder will cause irreparable harm to the Holder and that the remedy at law for any such breach may be inadequate. The Company therefore agrees that, in the event of any such breach or threatened breach, the holder of this Warrant shall be entitled, in addition to all other available remedies, to an injunction restraining any breach, without the necessity of showing economic loss and without any bond or other security being required.

16. TRANSFER. This Warrant may be offered for sale, sold, transferred or assigned without the consent of the Company.

17. SUCCESSORS AND ASSIGNS. Subject to applicable securities laws, this Warrant and the rights and obligations evidenced hereby shall inure to the benefit of and be binding upon the successors and permitted assigns of the Company and the successors and permitted assigns of Holder. The provisions of this Warrant are intended to be for the benefit of any Holder from time to time of this Warrant and shall be enforceable by the Holder or holder of Warrant Shares.

18. SEVERABILITY. If any provision of this Warrant is prohibited by law or otherwise determined to be invalid or unenforceable by a court of competent jurisdiction, the provision that would otherwise be prohibited, invalid or unenforceable shall be deemed amended to apply to the broadest extent that it would be valid and enforceable, and the invalidity or unenforceability of such provision shall not affect the validity of the remaining provisions of this Warrant so long as this Warrant as so modified continues to express, without material change, the original intentions of the parties as to the subject matter hereof and the prohibited nature, invalidity or unenforceability of the provision(s) in question does not substantially impair the respective expectations or reciprocal obligations of the parties or the practical realization of the benefits that would otherwise be conferred upon the parties. The parties will endeavor in good faith negotiations to replace the prohibited, invalid or unenforceable provision(s) with a valid provision(s), the effect of which comes as close as possible to that of the prohibited, invalid or unenforceable provision(s).

19. HEADINGS. The headings used in this Warrant are for the convenience of reference only and shall not, for any purpose, be deemed a part of this Warrant

20. CERTAIN DEFINITIONS. Capitalized terms used and not otherwise defined herein shall have the meanings set forth in the [Note Purchase Agreement] [A&R Note]. For purposes of this Warrant, the following terms shall have the following meanings:

(a) "**Attribution Parties**" means, collectively, the following Persons and entities: (i) any investment vehicle, including, any funds, feeder funds or managed accounts, currently, or from time to time after the Issuance Date, directly or indirectly managed or advised by the Holder's investment manager or any of its Affiliates or principals, (ii) any direct or indirect Affiliates of the Holder or any of the foregoing, (iii) any Person acting or who could be deemed to be acting as a Group together with the Holder or any of the foregoing and (iv) any other Persons whose beneficial ownership of the Company's Common Stock would or could be aggregated with the Holder's and the other Attribution Parties for purposes of Section 13(d) of the 1934 Act. For clarity, the purpose of the foregoing is to subject collectively the Holder and all other Attribution Parties to the Maximum Percentage.

(b) "**Bloomberg**" means Bloomberg Financial Markets.

(c) "**Business Day**" means any day other than Saturday, Sunday or other day on which commercial banks in The City of New York are authorized or required by law to remain closed.

(d) "**Change of Control**" means any Fundamental Transaction other than (i) any reorganization, recapitalization or reclassification of the Common Stock in which holders of the Company's voting power immediately prior to such reorganization, recapitalization or reclassification continue after such reorganization, recapitalization or reclassification to hold publicly traded securities and, directly or indirectly, the voting power of the surviving entity or entities necessary to elect a majority of the members of the board of directors (or their equivalent if other than a corporation) of such entity or entities, or (ii) pursuant to a migratory merger effected solely for the purpose of changing the jurisdiction of incorporation of the Company.

(e) "**Closing Bid Price**" and "**Closing Sale Price**" means, for any security as of any date, the consolidated closing bid price and lowest closing trade price, respectively, for such security on the Principal Market, as reported by Bloomberg, or, if the Principal Market begins to operate on an extended hours basis and does not designate the closing bid price or the closing trade price, as the case may be, then the last bid price or the last trade price, respectively, of such security prior to 4:00:00 p.m., New York time, as reported by Bloomberg, or, if the Principal Market is not the principal securities exchange or trading market for such security, the consolidated closing bid price or last trade price, respectively, of such security on the principal securities exchange or trading market where such security is listed or traded as reported by Bloomberg, or if the foregoing do not apply, the consolidated closing bid price or last trade price, respectively, of such security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg, or, if no closing bid price or last trade price, respectively, is reported for such security by Bloomberg, the average of the bid prices, or the ask prices, respectively, of any market makers for such security as reported in the "pink sheets" by Pink Sheets LLC (formerly the National Quotation Bureau, Inc.). If the Closing Bid Price or the Closing Sale Price cannot be calculated for a security on a particular date on any of the foregoing bases, the Closing Bid Price or the Closing Sale Price, as the case may be, of such security on such date shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then such dispute shall be resolved pursuant to Section 12. All such determinations to be appropriately adjusted for any stock dividend, stock split, stock combination or other similar transaction during the applicable calculation period.

(f) "**Common Stock**" means (i) the Company's shares of Common Stock, par value \$0.01 per share, and (ii) any share capital into which such Common Stock shall have been changed or any share capital resulting from a reclassification of such Common Stock.

(g) "**Common Stock Equivalents**" means any securities of the Company which would entitle the holder thereof to acquire at any time Common Stock, including, without limitation, any debt, preferred stock, right, option, warrant or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock.

(h) "**Convertible Securities**" means any stock or securities (other than Options) directly or indirectly convertible into or exercisable or exchangeable for shares of Common Stock.

(i) "**Eligible Market**" means the Principal Market, and any of the following markets or exchanges on which the Common Stock is listed or quoted for trading on the date in question: The New York Stock Exchange, Inc., The NYSE MKT, The NASDAQ Global Select Market, or The NASDAQ Global Market (or any successors to any of the foregoing).

(j) "**Expiration Date**" means the date five (5) years after the Issuance Date or, if such date falls on a day other than a Business Day or on which trading does not take place on the Principal Market (a "**Holiday**"), the next day that is not a Holiday.

(k) "**Fundamental Transaction**" means (i) the Company, directly or indirectly, in one or more related transactions effects any merger or consolidation of the Company with or into another person, (ii) the Company, directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of its assets in one or more related transactions, (iii) any direct or indirect purchase offer, tender offer or exchange offer (whether by the Company or another person) is completed pursuant to which holders of Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of the outstanding Common Stock, (iv) the Company, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of the Common Stock or any compulsory share exchange pursuant to which the Common Stock is effectively converted into or exchanged for other securities, cash or property, or (v) the Company, directly or indirectly, in one or more related transactions consummates a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spinoff or scheme of arrangement) with another person or group of persons whereby such other person or group acquires more than 50% of the outstanding shares of Common Stock (not including any shares of Common Stock held by the other person or other persons making or party to, or associated or affiliated with, the other persons making or party to such stock or share purchase agreement or other business combination).

(l) "**Initial Exercisability Date**" means the date that is six (6) months after the Issuance Date.

(m) ["**Note Purchase Agreement**" means that certain Note Purchase Agreement, dated as of May 31, 2017, between the Company and jVen Capital, LLC, a Delaware limited liability company, as provided to the Holder.]

(n) "**Options**" means any rights, warrants or options to subscribe for or purchase shares of Common Stock or Convertible Securities.

(o) "**Parent Entity**" of a Person means an entity that, directly or indirectly, controls the applicable Person and whose common shares or common stock or equivalent equity security is quoted or listed on an Eligible Market, or, if there is more than one such Person or Parent Entity, the Person or Parent Entity with the largest public market capitalization as of the date of consummation of the Fundamental Transaction.

(p) "**Person**" means an individual, a limited liability company, a partnership, a joint venture, a corporation, a trust, an unincorporated organization, any other entity and a government or any department or agency thereof.

(q) "**Principal Market**" means NASDAQ Capital Market.

(r) "**Registration Rights Agreement**" means that certain Amended and Restated Registration Rights Agreement, dated as of June 6, 2017, among the Company, the Holder and other investors named therein.

(s) "**Successor Entity**" means the Person (or, if so elected by the Holders, the Parent Entity) formed by, resulting from or surviving any Fundamental Transaction or the Person (or, if so elected by the Holders, the Parent Entity) with which such Fundamental Transaction shall have been entered into.

(t) "**Trading Day**" means (a) any day on which the Common Stock is listed or quoted and traded on its primary Trading Market, or (b) if the Common Stock is not then listed or quoted and traded on its primary Trading Market, then a day on which trading of the Common Stock occurs on another Trading Market, or (c) if the Common Stock is not listed or quoted as set forth in clauses (a) or (b) hereof, any Business Day.

[Signature Page Follows]

IN WITNESS WHEREOF, the Company has caused this Warrant to Purchase Common Stock to be duly executed as of the Issuance Date set out above.

OPGEN, INC.

By: /s/ Timothy C. Dec
Name: Timothy C. Dec
Title: Chief Financial Officer

EXERCISE NOTICE
TO BE EXECUTED BY THE REGISTERED HOLDER TO EXERCISE THIS
WARRANT TO PURCHASE COMMON STOCK

OPGEN, INC.

The undersigned holder hereby exercises the right to purchase _____ of the Common Stock ("**Warrant Shares**") of OpGen, Inc., a company organized under the laws of Delaware (the "**Company**"), evidenced by the attached Warrant to Purchase Common Stock (the "**Warrant**"). Capitalized terms used herein and not otherwise defined shall have the respective meanings set forth in the Warrant.

1. Form of Exercise Price. The Holder intends that payment of the Exercise Price shall be made as:

_____ a "Cash Exercise" with respect to _____ Warrant Shares; and/or

_____ a "Cashless Exercise" with respect to _____ Warrant Shares.

2. Payment of Exercise Price. In the event that the holder has elected a Cash Exercise with respect to some or all of the Warrant Shares to be issued pursuant hereto, the holder shall pay the Aggregate Exercise Price in the sum of \$ _____ to the Company in accordance with the terms of the Warrant.

3. Delivery of Warrant Shares. The Company shall deliver to the holder _____ Warrant Shares in accordance with the terms of the Warrant.

[The Warrant Shares shall be delivered to the following DWAC Account Number:

 _____]

4. Accredited Investor. The undersigned is an "accredited investor" as defined in Regulation D promulgated under the Securities Act of 1933, as amended.

Date: _____, _____

Name of Registered Holder

By: _____

Name:

Title:

ASSIGNMENT FORM

(To assign the foregoing Warrant, execute this form and supply required information. Do not use this form to purchase shares.)

FOR VALUE RECEIVED, the foregoing Warrant and all rights evidenced thereby are hereby assigned to

Name: _____
(Please Print)

Address: _____
(Please Print)

Phone Number: _____

Email Address: _____

Dated: _____

Holder's Signature: _____

Holder's Address: _____

ACKNOWLEDGMENT

The Company hereby acknowledges this Exercise Notice and hereby directs Philadelphia Stock Transfer, Inc. to issue the above indicated number of shares of Common Stock in accordance with the Transfer Agent Instructions dated [_____, 20[] from the Company and acknowledged and agreed to Philadelphia Stock Transfer, Inc..

OpGen, Inc.

By: _____
Name:
Title:

THE SECURITIES REPRESENTED BY THIS NOTE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, AND HAVE BEEN ACQUIRED FOR INVESTMENT AND NOT WITH A VIEW TO, OR IN CONNECTION WITH, THE SALE OR DISTRIBUTION THEREOF. NO SUCH TRANSFER MAY BE EFFECTED WITHOUT AN EFFECTIVE REGISTRATION STATEMENT RELATED THERETO OR AN OPINION OF COUNSEL IN A FORM SATISFACTORY TO THE COMPANY THAT SUCH REGISTRATION IS NOT REQUIRED UNDER THE SECURITIES ACT OF 1933, AS AMENDED.

OPGEN, INC.
SECURED CONVERTIBLE PROMISSORY NOTE

Note No. SC-[____]
Amount: \$500,000.00

Issue Date: [_____] [____], 2017

1. **Principal Amount.** For value received, OpGen, Inc., a Delaware corporation (the "Company"), does hereby promise to pay to the order of jVen Capital, LLC or its assignee (the "Holder"), the principal sum of Five Hundred Thousand and 00/100 Dollars (\$500,000.00), plus interest accrued thereon, as hereinafter specified (collectively, the "Obligations") on September 30, 2017 (the "Maturity Date"); provided, however, that if the closing of a Qualified Financing (as defined below) occurs before September 30, 2017, the Maturity Date is accelerated to the date that is five (5) business days after the closing of a Qualified Financing; and provided, further that if the closing of a Qualified Financing occurs after September 30, 2017, the Maturity Date is extended to the date that is five (5) business days after the closing of a Qualified Financing, but in no event later than December 31, 2017. An Event of Default (as defined below) shall have the effect set forth in Section 9.
 2. **Note Purchase Agreement.** This Note is issued pursuant to the Note Purchase Agreement, dated as of May 31, 2017, among the Company and the Holder (as the same may be amended from time to time, the "Purchase Agreement"), and is subject to the provisions thereof. Capitalized terms used but not defined herein have the meanings given to them in the Purchase Agreement.
 3. **Definitions.** In addition to the other terms defined herein, the following terms shall have the following meanings ascribed to them:
 - 3.1 "Bankruptcy Law" means Title 11, United States Code or any similar Federal or state law for the relief of debtors.
 - 3.2 "Common Stock" means the common stock, par value \$0.01 per share, of the Company.
 - 3.3 "MGHIF" means Merck Global Health Innovation Fund, LLC.
 - 3.4 "MGHIF Security Agreement" means that certain Security Agreement, dated July 14, 2015, between the Company and MGHIF pursuant to which the Company has granted a first priority security interest in the Collateral (as defined in the MGHIF Security Agreement) of the Company and its subsidiary AdvanDx, Inc.;
 - 3.5 "Qualified Financing" means an offering of equity or debt securities of the Company with net proceeds to the Company of at least \$5 million.
 - 3.6 "Securities Act" means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.
-

4. **Interest.** The Company agrees to pay interest, from the date hereof on the unpaid principal amount, at a rate equal to ten percent (10%) per annum, compounded annually (the "Interest Rate"), until the principal amount and all interest accrued thereon are paid; provided, that, upon the occurrence and during the continuation of an Event of Default, as defined in Section 8, the Interest Rate shall be fifteen percent (15%) per annum. Interest shall be due and payable to the Holder on the Maturity Date. In no event shall the amount of interest paid or agreed to be paid to the Holder hereunder exceed the highest lawful rate permissible under any law which a court of competent jurisdiction may deem applicable hereto. In such event, the Interest Rate shall automatically be reduced to the maximum rate permitted by such law.

5. **Security Agreement.**

In order to secure the payment and performance of this Note the Company has granted the Holder a security interest in the Collateral as set forth in that certain Security Agreement, dated as of June 6, 2017, by and between the Company and the Holder (as amended or restated from time to time, the "Security Agreement"). The security interest in the collateral granted by the Security Agreement is subject to the terms of the MGHIF Security Agreement and that certain Intercreditor Agreement, dated as of June 6, 2017, by and between the Company, the Holder and MGHIF (as amended or restated from time to time, the "Intercreditor Agreement").

6. **Payment.**

6.1 **Repayment.** All payment of principal shall be due and payable in lawful money of the United States of America at the principal office of the Holder, or at such other place as the holder hereof may from time to time designate in writing to the Company, not later than 5:00 p.m., Eastern Time, on the Maturity Date. All payments shall be applied first to the payment of any fees or charges outstanding hereunder, second to interest accrued and unpaid hereunder, and thereafter to principal.

6.2 **Prepayment.** The Company may prepay, without penalty, any principal amount on this Note, in whole or in part, at any time. Any prepayment will be applied first to the payment of any fees or charges outstanding hereunder, second to interest accrued and unpaid hereunder, and thereafter to principal.

6.3 **Ranking.** Subject to the terms of the MGHIF Security Agreement and the Intercreditor Agreement, all payments under this Note shall rank senior to all other existing and future indebtedness of the Company, excluding any capital and equipment leases.

6.4 **Payment Upon a Qualified Financing.** Subject to Section 6.5, if a Qualified Financing is consummated, then within five (5) business days of the Qualified Financing closing, the Company will have the option to repay all Obligations under this Note by issuing securities issued in the Qualified Financing (the "Qualified Financing Securities") at a discount of ten percent (10%) of the Qualified Financing offering price. No fractional shares of Qualified Financing Securities will be issued upon repayment of this Note under this Section 6.4. In lieu of any fractional shares to which the Holder may otherwise be entitled, the Company will pay to the Holder in cash the amount that would otherwise be paid as fractional shares of Qualified Financing Securities.

6.5 **Principal Market Regulation.** The Company shall not issue any shares of Common Stock upon repayment of this Note or otherwise pursuant to the terms of this Note or any other security issued pursuant to the terms of the Note Purchase Agreement if the issuance of such shares of Common Stock would exceed the aggregate number of shares of Common Stock which the Company may issue upon repayment of the Notes and the other securities issued pursuant to the terms of the Note Purchase Agreement without breaching the Company's obligations, if any, under the rules or regulations of the Nasdaq Stock Market (the number of shares which may be issued without violating such rules and regulations, including rules related to the aggregate of offerings under NASDAQ Stock Market Rule 5635(d) and rules related to a change of control under NASDAQ Stock Market Rule 5635(b), as applicable, the "Exchange Cap"), except that such limitation shall not apply in the event that the Company obtains the approval of its stockholders as required by the applicable rules of the Nasdaq Capital Market for issuances of shares of Common Stock upon repayment of the Notes through the issuance of securities pursuant to the terms of this Note or the other securities issued pursuant to the terms of the Note Purchase Agreement in excess of such amount. The determination of the applicability of the limitation contained in this Section 6.5 shall be in the sole discretion of the Company and shall be made by the Company in accordance with the rules and regulations of the Nasdaq Stock Market.

7. **Conversion.**

7.1 **Conversion Upon an Event of Default.**

(a) Upon the occurrence of an Event of Default (the "Default Date"), this Note will be convertible (the "Conversion"), in whole and not in part, at the option of the Holder, into shares of the Company's Series B Convertible Preferred Stock, par value \$0.01 per share ("Series B Preferred Stock"), which Series B Preferred Stock is convertible, on a 10:1 basis, into Common Stock.

(b) Upon a Conversion pursuant to Section 7.1(a), this Note shall be converted into the number of shares of Series B Preferred Stock equal to one (1) share of Series B Preferred Stock for each \$1.00 of the principal and accrued interest outstanding as of the date immediately preceding the Default Date. For the avoidance of doubt, if this Note is converted by the Holder in a Conversion, the two (2) times Obligations remedy set forth in Section 9 shall not apply.

7.2 **Mechanics and Effect of a Conversion.**

(a) No fractional shares of Series B Preferred Stock will be issued upon a Conversion of this Note. In lieu of any fractional shares to which the Holder may otherwise be entitled, the Company will pay to the Holder in cash the unconverted amount that would otherwise be converted into such fractional shares of Series B Preferred Stock.

(b) Upon a Conversion of this Note, the Holder shall surrender this Note, duly endorsed, at the principal offices of the Company or any transfer agent of the Company, and this Note shall be canceled in all respects. The Company will, at its expense, as soon as practicable thereafter, issue and deliver to the Holder a certificate or certificates for the number of shares of Series B Preferred Stock to which the Holder is entitled upon the Conversion.

(c) Upon Conversion of this Note, the Company will be forever released from all of its obligations and liabilities under this Note with regard to that portion of the principal amount and accrued interest being converted, including, without limitation, the obligation to pay such portion of the principal amount and accrued interest.

7.3 **Authorization of Conversion Shares.** The Company hereby covenants and agrees to take all such actions as may be necessary to authorize such number of shares of Series B Preferred Stock and underlying Common Stock as will be sufficient to accomplish a Conversion.

8. **Events of Default.** The occurrence of any one or more of the following events shall constitute an "Event of Default" under this Note:

8.1 **Payment Default.** The Company shall fail to pay the outstanding principal or accrued interest amount due under this Note, or any portion thereof when due, whether on the Maturity Date, or on such earlier date as is required by Section 9, or otherwise;

8.2 **Other Default.** The Company shall materially breach any representation, warranty, covenant, agreement or obligation of the Company under this Note, the Security Agreement, the Intercreditor Agreement or the Purchase Agreement, and shall fail to cure such breach within ten (10) days after written notice thereof to the Company;

8.3 **Other Indebtedness.** The Company shall default under any other material indebtedness of the Company, and shall fail to cure such default within ten (10) days after written notice thereof to the Company;

8.4 **Judgments.** Any money judgment, writ or similar process shall be entered or filed against the Company or any of its property or other assets for more than \$100,000, and shall remain unvacated, unbonded or unstayed for a period of thirty (30) days unless otherwise consented to by the Holder, which consent will not be unreasonably withheld; or

8.5 **Bankruptcy, Etc.** (a) The Company, pursuant to or within the meaning of any Bankruptcy Law, (i) admits in writing its inability to pay its debts generally as they become due, (ii) commences a voluntary case or proceeding under any Bankruptcy Law with respect to itself, (iii) consents to the entry of a judgment, decree or order for relief against it in an involuntary case or proceeding under any Bankruptcy Law, (iv) consents to the appointment of a custodian of it or for any part of its assets, (v) consents to or acquiesces in the institution of bankruptcy or insolvency proceedings against it, (vi) applies for, consents to or acquiesces in the appointment of or taking possession by a custodian of the Company or for any part of its assets, (vii) makes a general assignment for the benefit of its creditors, or (viii) takes any corporate act to authorize any of the foregoing; or (b) an involuntary petition is filed against the Company (unless such petition is dismissed or discharged within sixty (60) days) under any Bankruptcy Law now or hereafter in effect, or a custodian, receiver, trustee or assignee for the benefit of creditors (or other similar official) is appointed to take possession, custody or control of any property of the Company.

9. **Remedies.** Upon or at any time after the occurrence of an Event of Default specified in Sections 8.1, 8.2, 8.3 or 8.4 hereof, if the Holder does not convert this Note under Section 7.2, an amount equal to two (2) times all Obligations under this Note shall, upon the demand of the Holder, become due and payable without further presentment, demand, protest or other notice of any kind, all of which are hereby expressly waived. Upon the occurrence of an Event of Default specified in Section 8.5 hereof, if the Holder does not convert this Note under Section 7.2, an amount equal to two (2) times all Obligations shall thereupon and concurrently therewith become due and payable without presentment, demand, protest or other notice of any kind, all of which are hereby expressly waived.

10. **Certain Negative Covenants.** So long as the Company shall have any obligation under this Note, the Company shall not without the Holder's written consent:

10.1 **Distributions on Capital Stock.** Pay, declare or set apart for such payment, any dividend or other distribution (whether in cash, property or other securities) on shares of capital stock other than dividends on shares of Common Stock solely in the form of additional shares of Common Stock or, directly or indirectly or through any subsidiary make any other payment or distribution in respect of its capital stock except for distributions pursuant to any shareholders' rights plan which is approved by a majority of the Company's disinterested directors.

10.2 Restriction on Stock Repurchases. Redeem, repurchase or otherwise acquire (whether for cash or in exchange for property or other securities or otherwise) in any one transaction or series of related transactions any shares of capital stock of the Company or any warrants, rights or options to purchase or acquire any such shares.

10.3 Borrowings. Create, incur, assume or suffer to exist any liability for borrowed money in excess of \$50,000, except (a) borrowings in existence or committed on the date hereof and of which the Company has informed Holder in writing prior to the date hereof, (b) indebtedness to trade creditors incurred in the ordinary course of business consistent with past practices or (c) borrowings, the proceeds of which shall be used to repay this Note.

10.4 Sale of Assets. Sell, lease or otherwise dispose of any significant portion of its assets outside the ordinary course of business.

10.5 Advances and Loans. Lend money, give credit or make advances to any person, firm, joint venture or corporation, including, without limitation, officers, directors, employees, subsidiaries and affiliates of the Company, except loans, credits or advances in existence or committed on the date hereof and which the Company has informed Holder in writing prior to the date hereof.

10.6 Contingent Liabilities. Assume, guarantee, endorse, contingently agree to purchase or otherwise become liable upon the obligation of any person, firm, partnership, joint venture or corporation, except by the endorsement of negotiable instruments for deposit or collection and except assumptions, guarantees, endorsements and contingencies (a) in existence or committed on the date hereof and which the Company has informed Holder in writing prior to the date hereof, and (b) similar transactions in the ordinary course of business.

10.7 Limitation on Liens. Grant, or permit to be created, any lien other than the security interests created under the Security Agreement and any security interest which would constitute a Permitted Lien (as defined in the Security Agreement).

11. Certain Affirmative Covenants. So long as the Company shall have any obligation under this Note:

11.1 Payment of Taxes. The Company will promptly pay and discharge or cause to be paid and discharged, before the same shall become in default, all taxes and assessments imposed upon the Company or any of its subsidiaries or upon the income and profits of the Company or any of its subsidiaries, or upon any property, real, personal or mixed, belonging to the Company or any of its subsidiaries, or upon any part thereof by the United States or any State thereof, as well as all material claims for labor, materials and supplies which, if unpaid, would become a Lien upon such property or any part thereof; provided, however, that neither the Company nor any of its subsidiaries shall be required to pay and discharge or to cause to be paid and discharged any such tax, assessment, charge, levy or claim so long as both (i) the Company has established adequate reserves for such tax, assessment, charge, levy or claim and (ii) the Company or a subsidiary shall be contesting the validity thereof in good faith by appropriate proceedings.

11.2 Notice of Certain Events. The Company shall, immediately after it becomes aware of the occurrence of (a) any Event of Default (as hereinafter defined) or any event which, upon notice or lapse of time or both, would constitute such an Event of Default, or (b) any action, suit or proceeding at law or in equity or by or before any governmental instrumentality or agency which could reasonably be expected to materially impair the right of the Company to carry on its business substantially as then conducted, or could reasonably be expected to have a material adverse effect on the properties, assets, financial condition, operating results or business of the Company and its subsidiaries taken as a whole, give notice to the holder of this Note, specifying the nature of such event.

11.3 **Maintenance of Existence.** The Company shall preserve, renew and maintain in full force and effect the corporate or organizational existence of the Company and its subsidiaries.

11.4 **Maintenance of Property; Insurance.** The Company shall:

(a) maintain and preserve all of its property useful and necessary in its business in good working order and condition, ordinary wear and tear excepted; and

(b) maintain insurance with respect to its property and business with financially sound and reputable insurance companies that are not Affiliates of the Borrower, in such amounts and covering such risks as are usually insured against by similar companies engaged in the same or a similar business.

11.5 **Additional Collateral.** With respect to any property acquired after the Closing Date by the Company or any of its subsidiaries, the Company shall promptly, and in any event within 30 days of acquiring such property:

(a) execute and deliver to the Holder such supplements or amendments to the Security Agreement or such other documents as the Holder deems necessary or advisable to grant to the Holder a security interest in such property; and

(b) take all actions necessary or advisable to grant to the Holder a perfected first priority security interest in such property, including the filing of UCC-1 financing statements in such jurisdictions as may be required by the Security Agreement or by law or as may be requested by the Holder.

12. **Waiver and Amendment.** The Company hereby waives demand for payment, presentment for payment, protest, notice of payment, notice of dishonor, notice of nonpayment, notice of acceleration of maturity and diligence in taking any action to collect sums owing hereunder. Any waiver by the Holder of a breach of any provision of this Note shall not operate as or be construed to be a waiver of any other breach of such provision or of any breach of any other provision of this Note. The failure or delay of the Holder to insist upon strict adherence to any term of this Note on one or more occasions shall not be considered a waiver or deprive the Holder of the right thereafter to insist upon strict adherence to that term or any other term of this Note. Any waiver must be in writing. Any term of this Note may be amended and the observance of any term of this Note may be waived (either generally or in a particular instance and either retroactively or prospectively), with the written consent of the Company and the Holder. This Note may not be terminated or amended and the observance of any term of this Note may not be waived with respect to the Holder without the consent of the Holder. Any waiver or amendment effected in accordance with this section shall be binding upon the Company and the Holder.

13. **Governing Law.** EXCEPT AS OTHERWISE EXPRESSLY PROVIDED IN THE PURCHASE AGREEMENT, IN ALL RESPECTS, INCLUDING ALL MATTERS OF CONSTRUCTION, VALIDITY AND PERFORMANCE, THIS NOTE AND THE OBLIGATIONS ARISING HEREUNDER SHALL BE GOVERNED BY, AND CONSTRUED AND ENFORCED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF DELAWARE APPLICABLE TO OBLIGATIONS MADE AND PERFORMED IN THAT STATE, AND ANY APPLICABLE LAWS OF THE UNITED STATES OF AMERICA.

14. **Transfer.** This Note may be transferred or assigned by the Holder at any time and in any manner without the prior written consent of the Company, subject only to applicable securities laws. The Company may not transfer or assign this Note or any of its rights hereunder without the prior written consent of the Holder. The Holder shall promptly notify the Company of any transfer or assignment of this Note.

15. **Notices.** Notices hereunder shall be made as described in the Purchase Agreement.

16. **Stockholders, Officers and Directors Not Liable.** In no event shall any stockholder, officer or director of the Company be liable for any amounts due or payable pursuant to this Note. This Note is solely an obligation of the Company.

17. **Loss of Note.** Upon receipt by the Company of evidence satisfactory to it of the loss, theft, destruction or mutilation of this Note or any Note exchanged for it, and indemnity satisfactory to the Company (in case of loss, theft or destruction) or surrender and cancellation of such Note (in the case of mutilation), the Company will make and deliver in lieu of such Note a new Note of like tenor.

18. **Waiver of Jury Trial.** THE COMPANY HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN ANY LEGAL PROCEEDING DIRECTLY OR INDIRECTLY RELATING TO THIS NOTE, THE SECURITY AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY OR THEREBY WHETHER BASED ON CONTRACT, TORT OR ANY OTHER THEORY.

19. **Remedies; Expenses.** Upon the occurrence of any Event of Default and after any applicable cure period provided for herein, the Holder may, at its option, declare all indebtedness of principal and interest due and payable, whereupon this Note shall be immediately due and payable, and the Holder shall have and may exercise from time to time any and all rights and remedies available to it under any applicable law. The rights, remedies, powers and privileges herein provided are cumulative and not exclusive of any rights, remedies, powers and privileges provided by law. The Company shall reimburse the Holder on demand for all of its reasonable out-of-pocket costs, expenses and fees (including reasonable expenses and fees of its legal counsel) incurred by the Holder in connection with the enforcement of the Holder's rights hereunder and under the Security Agreement and the Intercreditor Agreement.

[Signature page follows]

IN WITNESS WHEREOF, the Company has executed and delivered this Note as of the day and year first above written.

COMPANY:

OPGEN, INC.,
a Delaware corporation

By:

Name: Timothy C. Dec
Title: Chief Financial Officer

THE SECURITIES REPRESENTED BY THIS NOTE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, AND HAVE BEEN ACQUIRED FOR INVESTMENT AND NOT WITH A VIEW TO, OR IN CONNECTION WITH, THE SALE OR DISTRIBUTION THEREOF. NO SUCH TRANSFER MAY BE EFFECTED WITHOUT AN EFFECTIVE REGISTRATION STATEMENT RELATED THERETO OR AN OPINION OF COUNSEL IN A FORM SATISFACTORY TO THE COMPANY THAT SUCH REGISTRATION IS NOT REQUIRED UNDER THE SECURITIES ACT OF 1933, AS AMENDED.

OPGEN, INC.
SECURED CONVERTIBLE PROMISSORY NOTE

Note No. SC-[____]
Amount: \$500,000.00

Issue Date: [_____] [____], 2017

1. **Principal Amount.** For value received, OpGen, Inc., a Delaware corporation (the "Company"), does hereby promise to pay to the order of jVen Capital, LLC or its assignee (the "Holder"), the principal sum of Five Hundred Thousand and 00/100 Dollars (\$500,000.00), plus interest accrued thereon, as hereinafter specified (collectively, the "Obligations") on September 30, 2017 (the "Maturity Date"); provided, however, that if the closing of a Qualified Financing (as defined below) occurs before September 30, 2017, the Maturity Date is accelerated to the date that is five (5) business days after the closing of a Qualified Financing; and provided, further that if the closing of a Qualified Financing occurs after September 30, 2017, the Maturity Date is extended to the date that is five (5) business days after the closing of a Qualified Financing, but in no event later than December 31, 2017. An Event of Default (as defined below) shall have the effect set forth in Section 9.
2. **Note Purchase Agreement.** This Note is issued pursuant to the Note Purchase Agreement, dated as of May 31, 2017, among the Company and the Holder (as the same may be amended from time to time, the "Purchase Agreement"), and is subject to the provisions thereof. Capitalized terms used but not defined herein have the meanings given to them in the Purchase Agreement.
3. **Definitions.** In addition to the other terms defined herein, the following terms shall have the following meanings ascribed to them:
 - 3.1 "Bankruptcy Law" means Title 11, United States Code or any similar Federal or state law for the relief of debtors.
 - 3.2 "Common Stock" means the common stock, par value \$0.01 per share, of the Company.
 - 3.3 "MGHIF" means Merck Global Health Innovation Fund, LLC.
 - 3.4 "MGHIF Security Agreement" means that certain Security Agreement, dated July 14, 2015, between the Company and MGHIF pursuant to which the Company has granted a first priority security interest in the Collateral (as defined in the MGHIF Security Agreement) of the Company and its subsidiary AdvanDx, Inc.;
 - 3.5 "Qualified Financing" means an offering of equity or debt securities of the Company with net proceeds to the Company of at least \$5 million.
 - 3.6 "Securities Act" means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

4. **Interest.** The Company agrees to pay interest, from the date hereof on the unpaid principal amount, at a rate equal to ten percent (10%) per annum, compounded annually (the "Interest Rate"), until the principal amount and all interest accrued thereon are paid; provided, that, upon the occurrence and during the continuation of an Event of Default, as defined in Section 8, the Interest Rate shall be fifteen percent (15%) per annum. Interest shall be due and payable to the Holder on the Maturity Date. In no event shall the amount of interest paid or agreed to be paid to the Holder hereunder exceed the highest lawful rate permissible under any law which a court of competent jurisdiction may deem applicable hereto. In such event, the Interest Rate shall automatically be reduced to the maximum rate permitted by such law.

5. **Security Agreement.**

In order to secure the payment and performance of this Note the Company has granted the Holder a security interest in the Collateral as set forth in that certain Security Agreement, dated as of June 6, 2017, by and between the Company and the Holder (as amended or restated from time to time, the "Security Agreement"). The security interest in the collateral granted by the Security Agreement is subject to the terms of the MGHIF Security Agreement and that certain Intercreditor Agreement, dated as of June 6, 2017, by and between the Company, the Holder and MGHIF (as amended or restated from time to time, the "Intercreditor Agreement").

6. **Payment.**

6.1 **Repayment.** All payment of principal shall be due and payable in lawful money of the United States of America at the principal office of the Holder, or at such other place as the holder hereof may from time to time designate in writing to the Company, not later than 5:00 p.m., Eastern Time, on the Maturity Date. All payments shall be applied first to the payment of any fees or charges outstanding hereunder, second to interest accrued and unpaid hereunder, and thereafter to principal.

6.2 **Prepayment.** The Company may prepay, without penalty, any principal amount on this Note, in whole or in part, at any time. Any prepayment will be applied first to the payment of any fees or charges outstanding hereunder, second to interest accrued and unpaid hereunder, and thereafter to principal.

6.3 **Ranking.** Subject to the terms of the MGHIF Security Agreement and the Intercreditor Agreement, all payments under this Note shall rank senior to all other existing and future indebtedness of the Company, excluding any capital and equipment leases.

6.4 **Payment Upon a Qualified Financing.** Subject to Section 6.5, if a Qualified Financing is consummated, then within five (5) business days of the Qualified Financing closing, the Holder will have the option to tender this Note to have the principal and interest of this Note repaid through the issuance of securities issued in the Qualified Financing (the "Qualified Financing Securities") at a discount of ten percent (10%) of the Qualified Financing offering price. No fractional shares of Qualified Financing Securities will be issued upon repayment of this Note under this Section 6.4. In lieu of any fractional shares to which the Holder may otherwise be entitled, the Company will pay to the Holder in cash the amount that would otherwise be paid as fractional shares of Qualified Financing Securities.

6.5 **Principal Market Regulation.** The Company shall not issue any shares of Common Stock upon repayment of this Note or otherwise pursuant to the terms of this Note or any other security issued pursuant to the terms of the Note Purchase Agreement if the issuance of such shares of Common Stock would exceed the aggregate number of shares of Common Stock which the Company may issue upon repayment of the Notes and the other securities issued pursuant to the terms of the Note Purchase Agreement without breaching the Company's obligations, if any, under the rules or regulations of the Nasdaq Stock Market (the number of shares which may be issued without violating such rules and regulations, including rules related to the aggregate of offerings under NASDAQ Stock Market Rule 5635(d) and rules related to a change of control under NASDAQ Stock Market Rule 5635(b), as applicable, the "Exchange Cap"), except that such limitation shall not apply in the event that the Company obtains the approval of its stockholders as required by the applicable rules of the Nasdaq Capital Market for issuances of shares of Common Stock upon repayment of the Notes through the issuance of securities pursuant to the terms of this Note or the other securities issued pursuant to the terms of the Note Purchase Agreement in excess of such amount. The determination of the applicability of the limitation contained in this Section 6.5 shall be in the sole discretion of the Company and shall be made by the Company in accordance with the rules and regulations of the Nasdaq Stock Market.

7. **Conversion.**

7.1 **Conversion Upon an Event of Default.**

(a) Upon the occurrence of an Event of Default (the "Default Date"), this Note will be convertible (the "Conversion"), in whole and not in part, at the option of the Holder, into shares of the Company's Series B Convertible Preferred Stock, par value \$0.01 per share ("Series B Preferred Stock"), which Series B Preferred Stock is convertible, on a 10:1 basis, into Common Stock.

(b) Upon a Conversion pursuant to Section 7.1(a), this Note shall be converted into the number of shares of Series B Preferred Stock equal to one (1) share of Series B Preferred Stock for each \$1.00 of the principal and accrued interest outstanding as of the date immediately preceding the Default Date. For the avoidance of doubt, if this Note is converted by the Holder in a Conversion, the two (2) times Obligations remedy set forth in Section 9 shall not apply.

7.2 **Mechanics and Effect of a Conversion.**

(a) No fractional shares of Series B Preferred Stock will be issued upon a Conversion of this Note. In lieu of any fractional shares to which the Holder may otherwise be entitled, the Company will pay to the Holder in cash the unconverted amount that would otherwise be converted into such fractional shares of Series B Preferred Stock.

(b) Upon a Conversion of this Note, the Holder shall surrender this Note, duly endorsed, at the principal offices of the Company or any transfer agent of the Company, and this Note shall be canceled in all respects. The Company will, at its expense, as soon as practicable thereafter, issue and deliver to the Holder a certificate or certificates for the number of shares of Series B Preferred Stock to which the Holder is entitled upon the Conversion.

(c) Upon Conversion of this Note, the Company will be forever released from all of its obligations and liabilities under this Note with regard to that portion of the principal amount and accrued interest being converted, including, without limitation, the obligation to pay such portion of the principal amount and accrued interest.

7.3 **Authorization of Conversion Shares.** The Company hereby covenants and agrees to take all such actions as may be necessary to authorize such number of shares of Series B Preferred Stock and underlying Common Stock as will be sufficient to accomplish a Conversion.

8. **Events of Default.** The occurrence of any one or more of the following events shall constitute an "Event of Default" under this Note:

8.1 **Payment Default.** The Company shall fail to pay the outstanding principal or accrued interest amount due under this Note, or any portion thereof when due, whether on the Maturity Date, or on such earlier date as is required by Section 9, or otherwise;

8.2 **Other Default.** The Company shall materially breach any representation, warranty, covenant, agreement or obligation of the Company under this Note, the Security Agreement, the Intercreditor Agreement or the Purchase Agreement, and shall fail to cure such breach within ten (10) days after written notice thereof to the Company;

8.3 **Other Indebtedness.** The Company shall default under any other material indebtedness of the Company, and shall fail to cure such default within ten (10) days after written notice thereof to the Company;

8.4 **Judgments.** Any money judgment, writ or similar process shall be entered or filed against the Company or any of its property or other assets for more than \$100,000, and shall remain unvacated, unbonded or unstayed for a period of thirty (30) days unless otherwise consented to by the Holder, which consent will not be unreasonably withheld; or

8.5 **Bankruptcy, Etc.** (a) The Company, pursuant to or within the meaning of any Bankruptcy Law, (i) admits in writing its inability to pay its debts generally as they become due, (ii) commences a voluntary case or proceeding under any Bankruptcy Law with respect to itself, (iii) consents to the entry of a judgment, decree or order for relief against it in an involuntary case or proceeding under any Bankruptcy Law, (iv) consents to the appointment of a custodian of it or for any part of its assets, (v) consents to or acquiesces in the institution of bankruptcy or insolvency proceedings against it, (vi) applies for, consents to or acquiesces in the appointment of or taking possession by a custodian of the Company or for any part of its assets, (vii) makes a general assignment for the benefit of its creditors, or (viii) takes any corporate act to authorize any of the foregoing; or (b) an involuntary petition is filed against the Company (unless such petition is dismissed or discharged within sixty (60) days) under any Bankruptcy Law now or hereafter in effect, or a custodian, receiver, trustee or assignee for the benefit of creditors (or other similar official) is appointed to take possession, custody or control of any property of the Company.

9. **Remedies.** Upon or at any time after the occurrence of an Event of Default specified in Sections 8.1, 8.2, 8.3 or 8.4 hereof, if the Holder does not convert this Note under Section 7.2, an amount equal to two (2) times all Obligations under this Note shall, upon the demand of the Holder, become due and payable without further presentment, demand, protest or other notice of any kind, all of which are hereby expressly waived. Upon the occurrence of an Event of Default specified in Section 8.5 hereof, if the Holder does not convert this Note under Section 7.2, an amount equal to two (2) times all Obligations shall thereupon and concurrently therewith become due and payable without presentment, demand, protest or other notice of any kind, all of which are hereby expressly waived.

10. **Certain Negative Covenants.** So long as the Company shall have any obligation under this Note, the Company shall not without the Holder's written consent:

10.1 **Distributions on Capital Stock.** Pay, declare or set apart for such payment, any dividend or other distribution (whether in cash, property or other securities) on shares of capital stock other than dividends on shares of Common Stock solely in the form of additional shares of Common Stock or, directly or indirectly or through any subsidiary make any other payment or distribution in respect of its capital stock except for distributions pursuant to any shareholders' rights plan which is approved by a majority of the Company's disinterested directors.

10.2 Restriction on Stock Repurchases. Redeem, repurchase or otherwise acquire (whether for cash or in exchange for property or other securities or otherwise) in any one transaction or series of related transactions any shares of capital stock of the Company or any warrants, rights or options to purchase or acquire any such shares.

10.3 Borrowings. Create, incur, assume or suffer to exist any liability for borrowed money in excess of \$50,000, except (a) borrowings in existence or committed on the date hereof and of which the Company has informed Holder in writing prior to the date hereof, (b) indebtedness to trade creditors incurred in the ordinary course of business consistent with past practices or (c) borrowings, the proceeds of which shall be used to repay this Note.

10.4 Sale of Assets. Sell, lease or otherwise dispose of any significant portion of its assets outside the ordinary course of business.

10.5 Advances and Loans. Lend money, give credit or make advances to any person, firm, joint venture or corporation, including, without limitation, officers, directors, employees, subsidiaries and affiliates of the Company, except loans, credits or advances in existence or committed on the date hereof and which the Company has informed Holder in writing prior to the date hereof.

10.6 Contingent Liabilities. Assume, guarantee, endorse, contingently agree to purchase or otherwise become liable upon the obligation of any person, firm, partnership, joint venture or corporation, except by the endorsement of negotiable instruments for deposit or collection and except assumptions, guarantees, endorsements and contingencies (a) in existence or committed on the date hereof and which the Company has informed Holder in writing prior to the date hereof, and (b) similar transactions in the ordinary course of business.

10.7 Limitation on Liens. Grant, or permit to be created, any lien other than the security interests created under the Security Agreement and any security interest which would constitute a Permitted Lien (as defined in the Security Agreement).

11. Certain Affirmative Covenants. So long as the Company shall have any obligation under this Note:

11.1 Payment of Taxes. The Company will promptly pay and discharge or cause to be paid and discharged, before the same shall become in default, all taxes and assessments imposed upon the Company or any of its subsidiaries or upon the income and profits of the Company or any of its subsidiaries, or upon any property, real, personal or mixed, belonging to the Company or any of its subsidiaries, or upon any part thereof by the United States or any State thereof, as well as all material claims for labor, materials and supplies which, if unpaid, would become a Lien upon such property or any part thereof; provided, however, that neither the Company nor any of its subsidiaries shall be required to pay and discharge or to cause to be paid and discharged any such tax, assessment, charge, levy or claim so long as both (i) the Company has established adequate reserves for such tax, assessment, charge, levy or claim and (ii) the Company or a subsidiary shall be contesting the validity thereof in good faith by appropriate proceedings.

11.2 Notice of Certain Events. The Company shall, immediately after it becomes aware of the occurrence of (a) any Event of Default (as hereinafter defined) or any event which, upon notice or lapse of time or both, would constitute such an Event of Default, or (b) any action, suit or proceeding at law or in equity or by or before any governmental instrumentality or agency which could reasonably be expected to materially impair the right of the Company to carry on its business substantially as then conducted, or could reasonably be expected to have a material adverse effect on the properties, assets, financial condition, operating results or business of the Company and its subsidiaries taken as a whole, give notice to the holder of this Note, specifying the nature of such event.

11.3 **Maintenance of Existence.** The Company shall preserve, renew and maintain in full force and effect the corporate or organizational existence of the Company and its subsidiaries.

11.4 **Maintenance of Property; Insurance.** The Company shall:

(a) maintain and preserve all of its property useful and necessary in its business in good working order and condition, ordinary wear and tear excepted; and

(b) maintain insurance with respect to its property and business with financially sound and reputable insurance companies that are not Affiliates of the Borrower, in such amounts and covering such risks as are usually insured against by similar companies engaged in the same or a similar business.

11.5 **Additional Collateral.** With respect to any property acquired after the Closing Date by the Company or any of its subsidiaries, the Company shall promptly, and in any event within 30 days of acquiring such property:

(a) execute and deliver to the Holder such supplements or amendments to the Security Agreement or such other documents as the Holder deems necessary or advisable to grant to the Holder a security interest in such property; and

(b) take all actions necessary or advisable to grant to the Holder a perfected first priority security interest in such property, including the filing of UCC-1 financing statements in such jurisdictions as may be required by the Security Agreement or by law or as may be requested by the Holder.

12. **Waiver and Amendment.** The Company hereby waives demand for payment, presentment for payment, protest, notice of payment, notice of dishonor, notice of nonpayment, notice of acceleration of maturity and diligence in taking any action to collect sums owing hereunder. Any waiver by the Holder of a breach of any provision of this Note shall not operate as or be construed to be a waiver of any other breach of such provision or of any breach of any other provision of this Note. The failure or delay of the Holder to insist upon strict adherence to any term of this Note on one or more occasions shall not be considered a waiver or deprive the Holder of the right thereafter to insist upon strict adherence to that term or any other term of this Note. Any waiver must be in writing. Any term of this Note may be amended and the observance of any term of this Note may be waived (either generally or in a particular instance and either retroactively or prospectively), with the written consent of the Company and the Holder. This Note may not be terminated or amended and the observance of any term of this Note may not be waived with respect to the Holder without the consent of the Holder. Any waiver or amendment effected in accordance with this section shall be binding upon the Company and the Holder.

13. **Governing Law.** EXCEPT AS OTHERWISE EXPRESSLY PROVIDED IN THE PURCHASE AGREEMENT, IN ALL RESPECTS, INCLUDING ALL MATTERS OF CONSTRUCTION, VALIDITY AND PERFORMANCE, THIS NOTE AND THE OBLIGATIONS ARISING HEREUNDER SHALL BE GOVERNED BY, AND CONSTRUED AND ENFORCED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF DELAWARE APPLICABLE TO OBLIGATIONS MADE AND PERFORMED IN THAT STATE, AND ANY APPLICABLE LAWS OF THE UNITED STATES OF AMERICA.

14. **Transfer.** This Note may be transferred or assigned by the Holder at any time and in any manner without the prior written consent of the Company, subject only to applicable securities laws. The Company may not transfer or assign this Note or any of its rights hereunder without the prior written consent of the Holder. The Holder shall promptly notify the Company of any transfer or assignment of this Note.

15. **Notices.** Notices hereunder shall be made as described in the Purchase Agreement.

16. **Stockholders, Officers and Directors Not Liable.** In no event shall any stockholder, officer or director of the Company be liable for any amounts due or payable pursuant to this Note. This Note is solely an obligation of the Company.

17. **Loss of Note.** Upon receipt by the Company of evidence satisfactory to it of the loss, theft, destruction or mutilation of this Note or any Note exchanged for it, and indemnity satisfactory to the Company (in case of loss, theft or destruction) or surrender and cancellation of such Note (in the case of mutilation), the Company will make and deliver in lieu of such Note a new Note of like tenor.

18. **Waiver of Jury Trial.** THE COMPANY HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN ANY LEGAL PROCEEDING DIRECTLY OR INDIRECTLY RELATING TO THIS NOTE, THE SECURITY AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY OR THEREBY WHETHER BASED ON CONTRACT, TORT OR ANY OTHER THEORY.

19. **Remedies; Expenses.** Upon the occurrence of any Event of Default and after any applicable cure period provided for herein, the Holder may, at its option, declare all indebtedness of principal and interest due and payable, whereupon this Note shall be immediately due and payable, and the Holder shall have and may exercise from time to time any and all rights and remedies available to it under any applicable law. The rights, remedies, powers and privileges herein provided are cumulative and not exclusive of any rights, remedies, powers and privileges provided by law. The Company shall reimburse the Holder on demand for all of its reasonable out-of-pocket costs, expenses and fees (including reasonable expenses and fees of its legal counsel) incurred by the Holder in connection with the enforcement of the Holder's rights hereunder and under the Security Agreement and the Intercreditor Agreement.

[Signature page follows]

IN WITNESS WHEREOF, the Company has executed and delivered this Note as of the day and year first above written.

COMPANY:

OPGEN, INC.,
a Delaware corporation

By:

Name: Timothy C. Dec
Title: Chief Financial Officer

THE SECURITIES REPRESENTED BY THIS NOTE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, AND HAVE BEEN ACQUIRED FOR INVESTMENT AND NOT WITH A VIEW TO, OR IN CONNECTION WITH, THE SALE OR DISTRIBUTION THEREOF. NO SUCH TRANSFER MAY BE EFFECTED WITHOUT AN EFFECTIVE REGISTRATION STATEMENT RELATED THERETO OR AN OPINION OF COUNSEL IN A FORM SATISFACTORY TO THE COMPANY THAT SUCH REGISTRATION IS NOT REQUIRED UNDER THE SECURITIES ACT OF 1933, AS AMENDED.

OPGEN, INC.
SECOND AMENDED & RESTATED SENIOR SECURED PROMISSORY NOTE

Note No. A&R SS-1
Amount: \$1,000,000.00

Original Issue Date: July 14, 2015
First A&R Date: June 6, 2017
Second A&R Date: June 28, 2017

1. **Principal Amount.** For value received, OpGen, Inc., a Delaware corporation (the "Company"), does hereby promise to pay to the order of Merck Global Health Innovation Fund, LLC or its assignee (the "Holder"), the principal sum of One Million and 00/100 Dollars (\$1,000,000.00), plus interest accrued thereon, as hereinafter specified (collectively, the "Obligations") on the earliest to occur of (i) July 14, 2018 (the "Maturity Date") or (ii) an Event of Default (as defined below).
 2. **Note Purchase Agreement; Amended & Restated Note.** This Note was originally issued pursuant to the Common Stock and Note Purchase Agreement, dated as of July 14, 2015, among the Company and the Holder (as the same may be amended from time to time, the "Purchase Agreement"), and is subject to the provisions thereof. Capitalized terms used but not defined herein have the meanings given to them in the Purchase Agreement. This Note was amended and restated as of June 6, 2017 (the "First A&R Date") to: (a) extend the Maturity Date from July 14, 2017 to July 14, 2018; (b) increase the interest rate from eight percent (8%) to ten percent (10%) per annum; (c) provide for the issuance of warrants to purchase Common Stock of the Company in an amount equal to ten percent (10%) of the outstanding principal sum of, plus accrued and unpaid interest on, this Note as of the date of June 6, 2017; and (d) include a voluntary conversion right to the Holder as of the Maturity Date at a discount equal to ten percent (10%) of the then-current market price of the Common Stock of the Company. This Note is now being further amended and restated as of June 28, 2017 to: (y) remove the conversion provisions; and (z) increase the warrant coverage to provide for the issuance of warrants to purchase Common Stock of the Company in an amount equal to twenty percent (20%) of the outstanding principal sum of, plus accrued and unpaid interest on, this Note as of the date of June 28, 2017 (the "Second A&R Date"). This Note, as amended and restated, is referred to as the "Note" herein. By accepting this Note, as amended and restated, the Holder consents to the Company's entry into that certain Note Purchase Agreement, dated May 31, 2017, by and between the Company and jVen Capital, and the request by the Company for the issuance of the promissory notes thereunder in accordance with the terms of such Note Purchase Agreement.
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3. **Definitions.** In addition to the other terms defined herein, the following terms shall have the following meanings ascribed to them:

3.1 "Bankruptcy Law" means Title 11, United States Code or any similar Federal or state law for the relief of debtors.

3.2 "Common Stock" means the common stock, par value \$0.01 per share, of the Company.

3.3 "Qualified Financing" means an offering of equity or debt securities of the Company with net proceeds to the Company of at least \$5 million.

3.4 "Securities Act" means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

4. **Interest.**

4.1 From the Original Issue Date up to the First A&R Date, the Company agrees to pay interest on the unpaid principal amount, at a rate equal to eight percent (8%) per annum, compounded annually (the "Original Interest Rate"), until the principal amount and all interest accrued thereon are paid; provided that, upon the occurrence and during the continuation of an Event of Default, as defined in Section 8 below, the Original Interest Rate will be fifteen percent (15%) per annum.

4.2 As of and after the First A&R Date, the Company agrees to pay interest on the unpaid principal amount, at a rate equal to ten percent (10%) per annum, compounded annually (the "Interest Rate"), until the principal amount and all interest accrued thereon are paid; provided that, upon the occurrence and during the continuation of an Event of Default, as defined in Section 8 below, the Interest Rate will be fifteen percent (15%) per annum. Interest shall be due and payable to the Holder on the Maturity Date. In no event shall the amount of interest paid or agreed to be paid to the Holder hereunder exceed the highest lawful rate permissible under any law which a court of competent jurisdiction may deem applicable hereto. In such event, the Interest Rate shall automatically be reduced to the maximum rate permitted by such law.

5. **Warrants.** Within fifteen (15) business days of the Second A&R Date, the Company shall issue to the Holder a Warrant, in the form attached to this Note as Exhibit A, to purchase shares of Common Stock equal to twenty percent (20%) of the principal amount of, plus accrued and unpaid interest on, this Note as of the Second A&R Date, calculated by dividing twenty percent (20%) of the principal amount of, plus accrued and unpaid interest on, this Note as of the Second A&R Date by the closing sale price of the Common Stock on the trading day immediately preceding the date of issuance as reported on the NASDAQ Capital Market. If a Qualified Financing is consummated after the Warrant is issued, the terms of the Warrant, other than the exercise price and the number of Warrant Shares, shall be amended to reflect terms equivalent to any warrants issued in such Qualified Financing.

6. **Security Agreement and Intercreditor Agreement.** In order to secure the payment and performance of this Note the Company has granted the Holder a first priority security interest in the Collateral as set forth in that certain Security Agreement dated as of July 14, 2015, by and between the Company, the Company's wholly owned subsidiary, AdvanDx, Inc., a Delaware corporation ("AdvanDx"), and the Holder (as amended or restated from time to time, the "Security Agreement"). As of the First A&R Date, the Company, AdvanDx, the Holder and JVen Capital entered into an Intercreditor Agreement.

7. **Payment.**

7.1 **Repayment.** All payment of principal shall be due and payable in lawful money of the United States of America at the principal office of the Holder, or at such other place as the holder hereof may from time to time designate in writing to the Company, not later than 5:00 p.m., Eastern Time, on the Maturity Date. All payments shall be applied first to the payment of any fees or charges outstanding hereunder, second to interest accrued and unpaid hereunder, and thereafter to principal.

7.2 **Prepayment.** The Company may prepay, without penalty, any principal amount on this Note, in whole or in part, at any time. Any prepayment will be applied first to the payment of any fees or charges outstanding hereunder, second to interest accrued and unpaid hereunder, and thereafter to principal.

7.3 **Ranking.** All payments under this Note shall rank senior to all other existing and future indebtedness of the Company, excluding any capital and equipment leases except as, and only to the extent, expressly set forth in the Intercreditor Agreement.

8. **Events of Default.** The occurrence of any one or more of the following events shall constitute an "Event of Default" under this Note:

8.1 **Payment Default.** The Company shall fail to pay the outstanding principal or accrued interest amount due under this Note, or any portion thereof when due, whether on the Maturity Date, or on such earlier date as is required by Section 9, or otherwise;

8.2 **Other Default.** The Company shall materially breach any representation, warranty, covenant, agreement or obligation of the Company under this Note, the Security Agreement, the Intercreditor Agreement or the Purchase Agreement, and shall fail to cure such breach within ten (10) days after written notice thereof to the Company;

8.3 **Other Indebtedness.** The Company shall default under any other material indebtedness of the Company, and shall fail to cure such default within ten (10) days after written notice thereof to the Company;

8.4 **Judgments.** Any money judgment, writ or similar process shall be entered or filed against the Company or any of its property or other assets for more than \$100,000, and shall remain unvacated, unbonded or unstayed for a period of thirty (30) days unless otherwise consented to by the Holder, which consent will not be unreasonably withheld; or

8.5 **Bankruptcy, Etc.** (a) The Company, pursuant to or within the meaning of any Bankruptcy Law, (i) admits in writing its inability to pay its debts generally as they become due, (ii) commences a voluntary case or proceeding under any Bankruptcy Law with respect to itself, (iii) consents to the entry of a judgment, decree or order for relief against it in an involuntary case or proceeding under any Bankruptcy Law, (iv) consents to the appointment of a custodian of it or for any part of its assets, (v) consents to or acquiesces in the institution of bankruptcy or insolvency proceedings against it, (vi) applies for, consents to or acquiesces in the appointment of or taking possession by a custodian of the Company or for any part of its assets, (vii) makes a general assignment for the benefit of its creditors, or (viii) takes any corporate act to authorize any of the foregoing; or (b) an involuntary petition is filed against the Company (unless such petition is dismissed or discharged within sixty (60) days) under any Bankruptcy Law now or hereafter in effect, or a custodian, receiver, trustee or assignee for the benefit of creditors (or other similar official) is appointed to take possession, custody or control of any property of the Company.

9. **Remedies.** Upon or at any time after the occurrence of an Event of Default specified in Sections 8.1, 8.2, 8.3 or 8.4 hereof, all Obligations under this Note shall, upon the demand of the Holder, become due and payable without further presentment, demand, protest or other notice of any kind, all of which are hereby expressly waived. Upon the occurrence of an Event of Default specified in Section 8.5 hereof, all Obligations shall thereupon and concurrently therewith automatically become due and payable without presentment, demand, protest or other notice of any kind, all of which are hereby expressly waived.

10. **Certain Negative Covenants.** So long as the Company shall have any obligation under this Note, the Company shall not without the Holder's written consent:

10.1 **Distributions on Capital Stock.** Pay, declare or set apart for such payment, any dividend or other distribution (whether in cash, property or other securities) on shares of capital stock other than dividends on shares of Common Stock solely in the form of additional shares of Common Stock or, directly or indirectly or through any subsidiary make any other payment or distribution in respect of its capital stock except for distributions pursuant to any shareholders' rights plan which is approved by a majority of the Company's disinterested directors.

10.2 **Restriction on Stock Repurchases.** Redeem, repurchase or otherwise acquire (whether for cash or in exchange for property or other securities or otherwise) in any one transaction or series of related transactions any shares of capital stock of the Company or any warrants, rights or options to purchase or acquire any such shares.

10.3 **Borrowings.** Create, incur, assume or suffer to exist any liability for borrowed money in excess of \$50,000, except (a) borrowings in existence or committed on the date hereof and of which the Company has informed Holder in writing prior to the date hereof, (b) indebtedness to trade creditors incurred in the ordinary course of business consistent with past practices or (c) borrowings, the proceeds of which shall be used to repay this Note.

10.4 **Sale of Assets.** Sell, lease or otherwise dispose of any significant portion of its assets outside the ordinary course of business.

10.5 **Advances and Loans.** Lend money, give credit or make advances to any person, firm, joint venture or corporation, including, without limitation, officers, directors, employees, subsidiaries and affiliates of the Company, except loans, credits or advances in existence or committed on the date hereof and which the Company has informed Holder in writing prior to the date hereof.

10.6 **Contingent Liabilities.** Assume, guarantee, endorse, contingently agree to purchase or otherwise become liable upon the obligation of any person, firm, partnership, joint venture or corporation, except by the endorsement of negotiable instruments for deposit or collection and except assumptions, guarantees, endorsements and contingencies (a) in existence or committed on the date hereof and which the Company has informed Holder in writing prior to the date hereof, and (b) similar transactions in the ordinary course of business.

10.7 Limitation on Liens. Grant, or permit to be created, any lien other than the security interests created under the Security Agreement and any security interest which would constitute a Permitted Lien (as defined in the Security Agreement).

11. Certain Affirmative Covenants. So long as the Company shall have any obligation under this Note:

11.1 Payment of Taxes. The Company will promptly pay and discharge or cause to be paid and discharged, before the same shall become in default, all taxes and assessments imposed upon the Company or any of its subsidiaries or upon the income and profits of the Company or any of its subsidiaries, or upon any property, real, personal or mixed, belonging to the Company or any of its subsidiaries, or upon any part thereof by the United States or any State thereof, as well as all material claims for labor, materials and supplies which, if unpaid, would become a Lien upon such property or any part thereof; provided, however, that neither the Company nor any of its subsidiaries shall be required to pay and discharge or to cause to be paid and discharged any such tax, assessment, charge, levy or claim so long as both (i) the Company has established adequate reserves for such tax, assessment, charge, levy or claim and (ii) the Company or a subsidiary shall be contesting the validity thereof in good faith by appropriate proceedings.

11.2 Notice of Certain Events. The Company shall, immediately after it becomes aware of the occurrence of (i) any Event of Default (as hereinafter defined) or any event which, upon notice or lapse of time or both, would constitute such an Event of Default, or (ii) any action, suit or proceeding at law or in equity or by or before any governmental instrumentality or agency which could reasonably be expected to materially impair the right of the Company to carry on its business substantially as then conducted, or could reasonably be expected to have a material adverse effect on the properties, assets, financial condition, operating results or business of the Company and its subsidiaries taken as a whole, give notice to the holder of this Note, specifying the nature of such event.

11.3 Maintenance of Existence. The Company shall preserve, renew and maintain in full force and effect the corporate or organizational existence of the Company and its subsidiaries.

11.4 Maintenance of Property; Insurance. The Company shall:

(a) maintain and preserve all of its property useful and necessary in its business in good working order and condition, ordinary wear and tear excepted; and

(b) maintain insurance with respect to its property and business with financially sound and reputable insurance companies that are not Affiliates of the Borrower, in such amounts and covering such risks as are usually insured against by similar companies engaged in the same or a similar business.

11.5 **Additional Collateral.** With respect to any property acquired after the Closing Date by the Company or any of its subsidiaries, the Company shall promptly, and in any event within 30 days of acquiring such property:

(a) execute and deliver to the Holder such supplements or amendments to the Security Agreement or such other documents as the Holder deems necessary or advisable to grant to the Holder a security interest in such property; and

(b) take all actions necessary or advisable to grant to the Holder a perfected first priority security interest in such property, including the filing of UCC-1 financing statements in such jurisdictions as may be required by the Security Agreement or by law or as may be requested by the Holder.

12. **Waiver and Amendment.** The Company hereby waives demand for payment, presentment for payment, protest, notice of payment, notice of dishonor, notice of nonpayment, notice of acceleration of maturity and diligence in taking any action to collect sums owing hereunder. Any waiver by the Holder of a breach of any provision of this Note shall not operate as or be construed to be a waiver of any other breach of such provision or of any breach of any other provision of this Note. The failure or delay of the Holder to insist upon strict adherence to any term of this Note on one or more occasions shall not be considered a waiver or deprive the Holder of the right thereafter to insist upon strict adherence to that term or any other term of this Note. Any waiver must be in writing. Any term of this Note may be amended and the observance of any term of this Note may be waived (either generally or in a particular instance and either retroactively or prospectively), with the written consent of the Company and the Holder. This Note may not be terminated or amended and the observance of any term of this Note may not be waived with respect to the Holder without the consent of the Holder. Any waiver or amendment effected in accordance with this section shall be binding upon the Company and the Holder.

13. **Governing Law.** EXCEPT AS OTHERWISE EXPRESSLY PROVIDED IN THE PURCHASE AGREEMENT, IN ALL RESPECTS, INCLUDING ALL MATTERS OF CONSTRUCTION, VALIDITY AND PERFORMANCE, THIS NOTE AND THE OBLIGATIONS ARISING HEREUNDER SHALL BE GOVERNED BY, AND CONSTRUED AND ENFORCED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF DELAWARE APPLICABLE TO OBLIGATIONS MADE AND PERFORMED IN THAT STATE, AND ANY APPLICABLE LAWS OF THE UNITED STATES OF AMERICA.

14. **Transfer.** This Note may be transferred or assigned by the Holder at any time and in any manner without the prior written consent of the Company, subject only to applicable securities laws. The Company may not transfer or assign this Note or any of its rights hereunder without the prior written consent of the Holder. The Holder shall promptly notify the Company of any transfer or assignment of this Note.

15. **Notices.** Notices hereunder shall be made as described in the Purchase Agreement.

16. **Stockholders, Officers and Directors Not Liable.** In no event shall any stockholder, officer or director of the Company be liable for any amounts due or payable pursuant to this Note. This Note is solely an obligation of the Company.

17. **Loss of Note.** Upon receipt by the Company of evidence satisfactory to it of the loss, theft, destruction or mutilation of this Note or any Note exchanged for it, and indemnity satisfactory to the Company (in case of loss, theft or destruction) or surrender and cancellation of such Note (in the case of mutilation), the Company will make and deliver in lieu of such Note a new Note of like tenor.

18. **Waiver of Jury Trial.** THE COMPANY HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN ANY LEGAL PROCEEDING DIRECTLY OR INDIRECTLY RELATING TO THIS NOTE, THE SECURITY AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY OR THEREBY WHETHER BASED ON CONTRACT, TORT OR ANY OTHER THEORY.

19. **Remedies; Expenses.** Upon the occurrence of any Event of Default and after any applicable cure period provided for herein, the Holder may, at its option, declare all indebtedness of principal and interest due and payable, whereupon this Note shall be immediately due and payable, and the Holder shall have and may exercise from time to time any and all rights and remedies available to it under any applicable law. The rights, remedies, powers and privileges herein provided are cumulative and not exclusive of any rights, remedies, powers and privileges provided by law. The Company shall reimburse the Holder on demand for all of its reasonable out-of-pocket costs, expenses and fees (including reasonable expenses and fees of its legal counsel) incurred by the Holder in connection with the enforcement of the Holder's rights hereunder and under the Security Agreement.

[Signature page follows]

