Filed Pursuant to Rule 433
Issuer Free Writing Prospectus
Registration Statement File No. 333-230036

OpGen®

Disruptive Technology to Guide Precision Antibiotic Therapy

NASDQ: OPGN
March 2019

Forward Looking Statement

This presentation includes statements relating to the company's Acuitas® AMR Gene Panel products, Acuitas Lighthouse® Software, FDA cleared QuickFISH® products, and commercialization plans for these products and services. These statements and other statements regarding our future plans and goals constitute "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934, and are intended to qualify for the safe harbor from liability established by the Private Securities Litigation Reform Act of 1995. Such statements are subject to risks and uncertainties that are often difficult to predict, are beyond our control, and which may cause results to differ materially from expectations. Factors that could cause our results to differ materially from those described include, but are not limited to, our successful development of new products and services, our ability to obtain regulatory clearances and approvals for our products and services, the rate of adoption of our products and services by hospitals and other healthcare providers, the success of our commercialization efforts, the effect on our business of existing and new regulatory requirements, and other economic and competitive factors. For a discussion of the most significant risks and uncertainties associated with OpGen's business, please review our filings with the Securities and Exchange Commission (SEC). You are cautioned not to place undue reliance on these forward-looking statements, which are based on our expectations as of the date of this presentation and speak only as of the date of this presentation. We undertake no obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events or otherwise.

Free Writing Prospectus

OpGen, Inc. has filed with the SEC a registration statement (File No. 333- 230036) and a preliminary prospectus (the Preliminary Prospectus) for the offering to which this communication relates. Before you invest, you should read the Preliminary Prospectus (including the documents incorporated by reference therein) and other documents we have filed with the SEC for more complete information about us and this offering. You may get these documents for free by visiting EDGAR on the SEC website at www.sec.gov. Alternatively, when they are available, copies of the Preliminary Prospectus may be obtained from Aegis Capital Corp., 810 Seventh Avenue, 18th Floor New York, New York 10019. The most recent Preliminary Prospectus filed with the SEC may be obtained by clicking on the active hyperlink below:

https://www.sec.gov/Archives/edgar/data/1293818/000107997319000135/opgen_s1a1.htm

This presentation shall not constitute an offer to sell, or the solicitation of an offer to buy, nor will there be any sale of these securities in any state or other jurisdiction in which such offer, solicitation or sale would be unlawful prior to the registration or qualification under the securities laws of such state or jurisdiction. Neither the SEC nor any other regulatory body has approved or disapproved of our securities or passed upon the accuracy of this presentation.

The offering will only be made by means of a prospectus pursuant to a registration statement that is filed with the SEC after such registration statement becomes effective.

Offering Summary

Issuer	OPGEN, INC.
Exchange/Ticker	NASDAQ/OPGN
Offering Size	Approximately $6,500,000 (100% Primary)
Over Allotment	15% (100% Primary)
Use of Proceeds	1. Research and development and regulatory activities in support of the Company's anticipated FDA 510(k) submissions for the Acuitas® AMR Gene Panel tests and the Acuitas Lighthouse® Software. 2. Commercialization of the Acuitas RUO products and Acuitas in vitro diagnostic products following receipt of FDA clearance. 3. Investments in manufacturing and operations infrastructure to support sales of the Company's products. 4. The balance for general corporate purposes.
Sole Book-Runner	Aegis Capital Corp.

Corporate Overview

Precision medicine company focused on combatting the global antibiotic resistance crisis by leveraging molecular diagnostics, informatics, and genomic analysis

Acuitas Lighthouse®

Provider of rapid and actionable information about life threatening drug resistant infections

Building global network of customers and partners to improve patient outcomes, and decrease the spread of infections caused by multidrug-resistant microorganisms, or MDROs

Acuitas® AMR Gene Panel

Key product Acuitas® AMR Gene Panel can detect five pathogens and 47 resistance genes, predicting resistance for 9 classes of antibiotics

Collaborations with industry leaders to support the execution of our commercialization strategy as we work to address a $2 billion potential market for precision medicine MDRO solutions

OpGen®

OpGen and the Investment Opportunity

VALIDATED, DISRUPTIVE TECHNOLOGY

Collaborations with NY Dept. of Health, Merck, QIAGEN and Thermo Fisher

SIGNIFICANT MARKET OPPORTUNITY

Working to address a $2B global market in need of novel solutions

ADDRESSING MAJOR GLOBAL CRISIS

Multi-drug resistance causes $20B in excess direct healthcare costs and 700,000 deaths annually[1]

BUILDING COMMERCIAL MOMENTUM

Key commercial milestones throughout 2019, including two anticipated regulatory approvals

EXPERIENCED TEAM

Management has proven track record of value creation for diagnostic, genomic and pharma companies

OpGen

1. O'Neill, Jim. "Antimicrobial Resistance: Tackling a Crisis for the Health and Wealth of Nations. "*Review on Antimicrobial Resistance*" (December 2014)

Addressing the Significant and Growing Global Challenge of Multi-drug Resistance

Antibiotic resistance is one of the biggest public health challenges and leads to a significant number of patient infections, hospitalizations and deaths. It is often caused by antibiotics use or the spread of the resistant strains of bacteria

700,000

Deaths each year from antimicrobial resistance[1]

50,000

Deaths annually in the US and Europe from drug-resistant infections[1]

$20 Billion

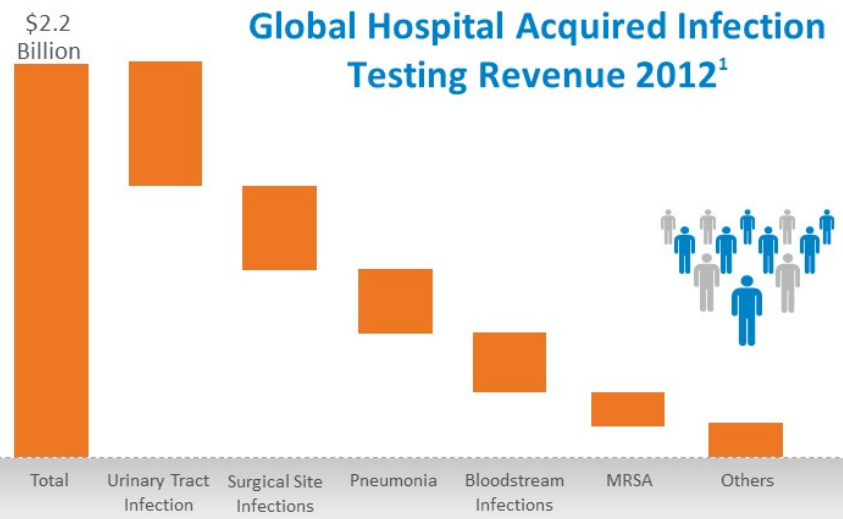
Excess direct healthcare costs in the US from drug-resistant infections[2]

1. O'Neill, Jim. "Antimicrobial Resistance: Tackling a Crisis for the Health and Wealth of Nations." *Review on Antimicrobial Resistance* (December 2014)
2. "Antibiotic Resistance Threats in the United States." Prepared by the CDC (2013)

Large Market for Precision Medicine MDRO Solutions

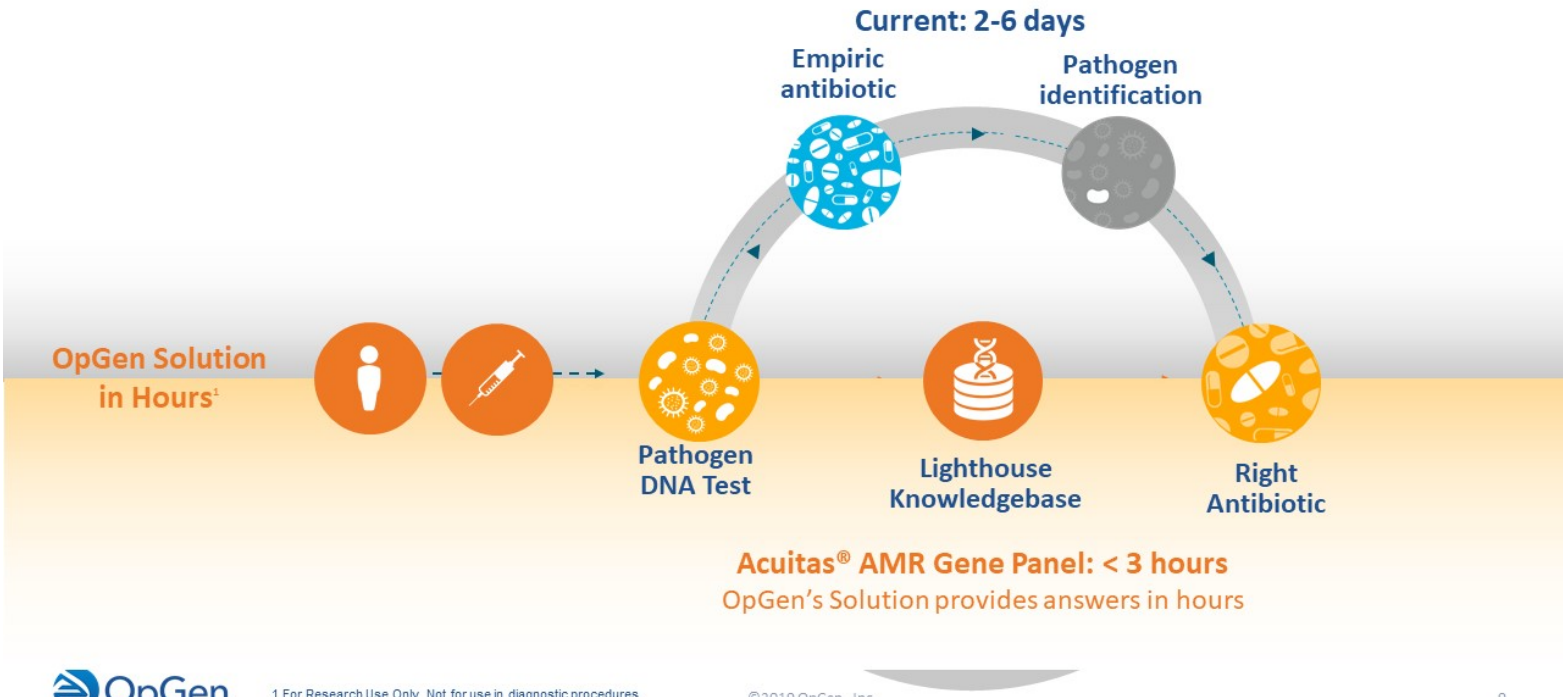
Lead Product: cUTI, Clinical Isolates. Second Product Target: Lower Respiratory Infection

- $2B Global Market[1]
- 19% CAGR: One of the fastest growing U.S. molecular diagnostic segments[1]
- Multiple high-acuity patient types



[1] Hospital Acquired Infection Testing Market - Global Industry Analysis, Size, Share, Growth, Trends and Forecast, 2013 - 2019

Our Solution: Rapid, Precision Medicine Antibiotic Decision Making

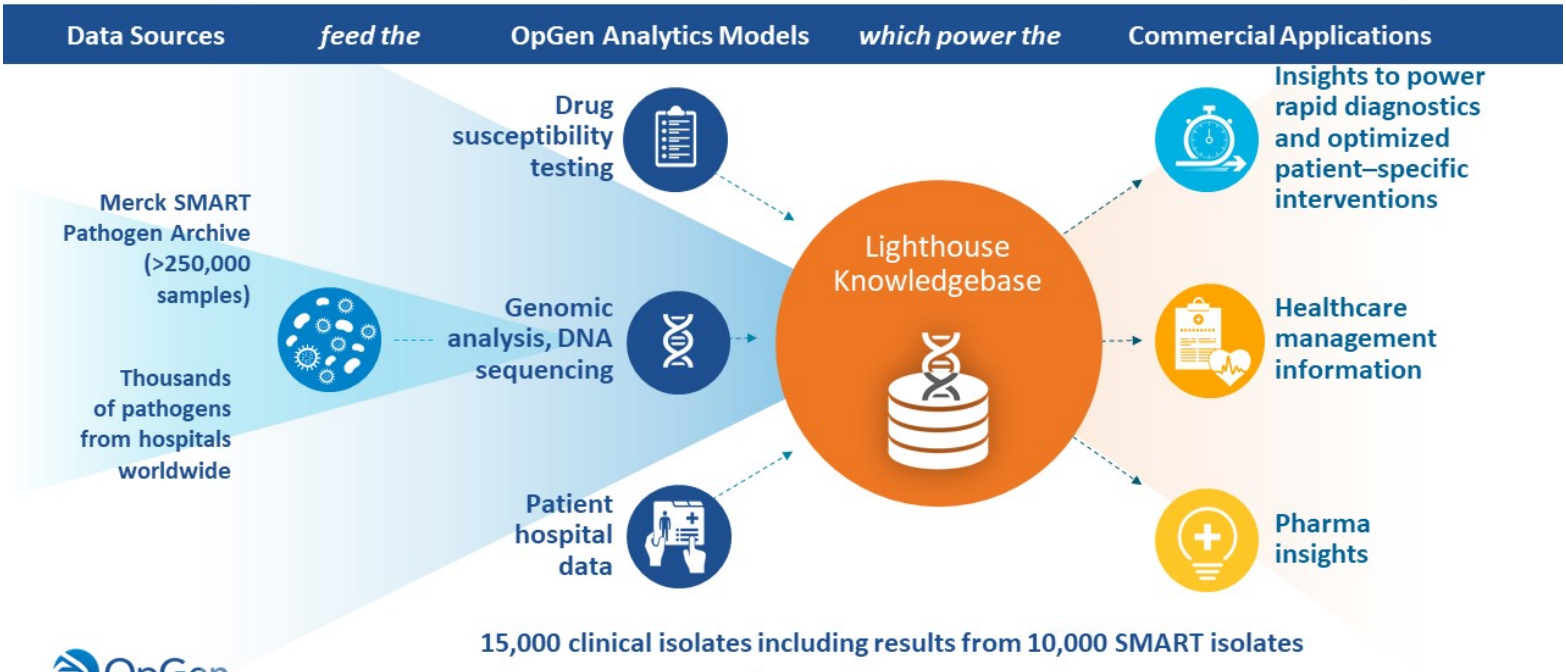


Acuitas® AMR Gene Panel: < 3 hours

OpGen's Solution provides answers in hours

1 For Research Use Only. Not for use in diagnostic procedures.

A Proprietary, Curated MDRO Genomic Knowledgebase



Productive Industry Relationships for Precision Medicine MDRO Solutions

Activities with top industry players provide validation for technology and bolster commercialization strategy

NY State Department of Health and ILÚM (Merck)

New York State funding for OpGen and ILÚM to build a sustainable, flexible infectious diseases reporting, tracking and surveillance tool for antimicrobial resistance that can be applied across the State. The goal is to improve patient outcomes and save healthcare dollars

QIAGEN

Use EZ1 instruments and reagent kits from QIAGEN and sell or place them with customers in the United States for use with the Acuitas® AMR Gene Panel

ThermoFisher SCIENTIFIC

Combine Thermo Fisher's real-time PCR solutions with OpGen's genomic analysis and bioinformatics technology to help healthcare providers rapidly and accurately identify bacterial antibiotic susceptibility using resistance gene profiles

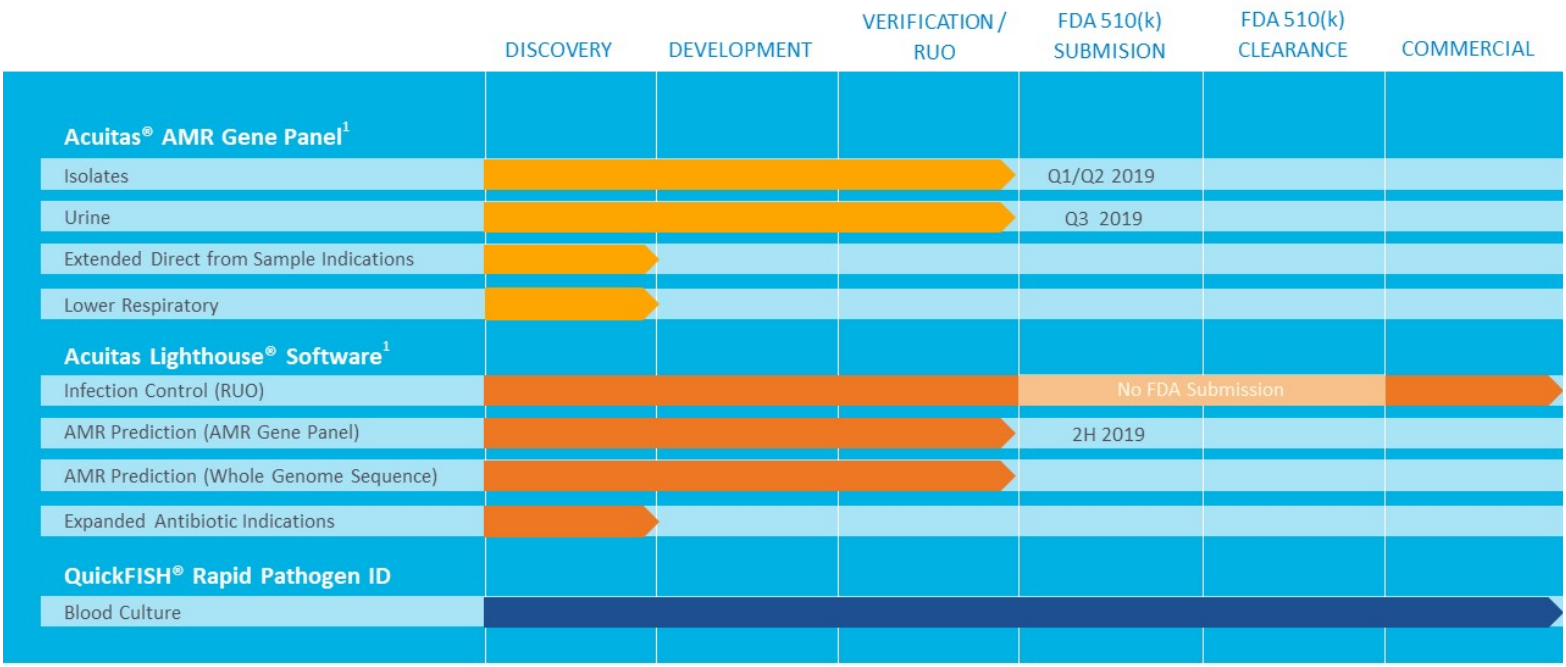
ilúm™ HEALTH SOLUTIONS Powering Better Outcomes

Provides mobile precision medicine and Antimicrobial Stewardship solutions that accelerate definitive therapy selection and optimize clinical decision support

OpGen.

Products and Pipeline

Novel Product Pipeline



1 For Research Use Only. Not for use in diagnostic procedures.

Insights Powered by Rapid Diagnostics & Bioinformatics[1]

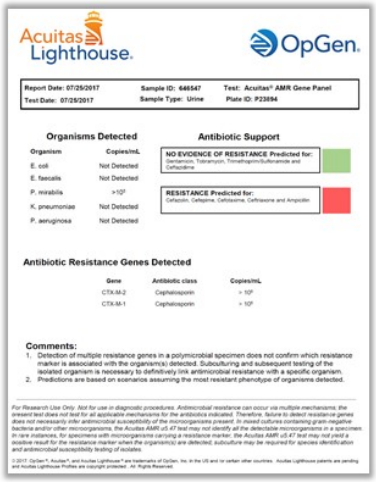
RESULTS
< 3 hours

DETECTS
5 pathogens
47 resistance genes & mutations

PREDICTS RESISTANCE FOR
12 antibiotics

SPECIMEN TYPES
Urine
Isolates

Acuitas Lighthouse®


Acuitas Lighthouse. OpGen.

Report Date: 07/25/2017 Sample ID: 646547 Test: Acuitas® AMR Gene Panel
Test Date: 07/25/2017 Sample Type: Urine Plate ID: P23894

Organisms Detected

Organism	Copies/mL
E. coli	Not Detected
E. faecalis	Not Detected
P. mirabilis	>10⁵
K. pneumoniae	Not Detected
P. aeruginosa	Not Detected

Antibiotic Support

NO EVIDENCE OF RESISTANCE Predicted for: Gentamicin, Tobramycin, Trimethoprim/Sulfamethoxazole and Ceftazidime

RESISTANCE Predicted for: Cefazolin, Cefepime, Cefotaxime, Ceftriaxone and Ampicillin

Antibiotic Resistance Genes Detected

Gene	Antibiotic class	Copies/mL
CTX-M-2	Cephalosporin	> 10⁵
CTX-M-1	Cephalosporin	> 10⁵

Comments:
1. Detection of multiple resistance genes in a polymicrobial specimen does not confirm which resistance marker is associated with the organism(s) detected. Subculturing and subsequent testing of the isolated organism is necessary to definitively link antimicrobial resistance with a specific organism.
2. Predictions are based on scenarios assuming the most resistant phenotype of organisms detected.

For Research Use Only. Not for use in diagnostic procedures. Antimicrobial resistance can occur via multiple mechanisms; the present test does not test for all applicable mechanisms for the antibiotics indicated. Therefore, failure to detect resistance genes does not necessarily infer antimicrobial susceptibility of the microorganisms present. In mixed cultures containing gram-negative bacteria and/or other microorganisms, the Acuitas AMR v5.47 test may not identify all the detectable microorganisms in a specimen. In rare instances, for specimens with microorganisms carrying a resistance marker, the Acuitas AMR v5.47 test may not yield a positive result for the resistance marker when the organism(s) are detected; subculture may be required for species identification and antimicrobial susceptibility testing of isolates.

1 For Research Use Only. Not for use in diagnostic procedures.

Predict Antibiotic Resistance[1] · Know Local AMR Ecosystem

Proprietary, cloud-based bioinformatics platform powers our ability to rapidly generate meaningful results that can change the landscape of clinical management and improves outcomes for patients

1 For Research Use Only. Not for use in diagnostic procedures.

Initial Focus on High Risk Patient Bacterial Isolate Testing

1 million U.S. bacterial isolate potential testing opportunity[1]
90,000 estimated U.S. CRE samples annually[2]

1. Company estimates
2. Achaogen, Inc. Estimate

Management of Complicated Urinary Tract Infections

Complicated urinary tract infections (cUTI) are increasingly difficult to treat due to rising antibiotic resistance rates. 34% annual ESBL resistance increase 2010-2014

cUTI Resistance Profile

1.3 million[1]
complicated UTIs (cUTI) per year

14%	35%	3-14%
ESBL (Extended-spectrum b-lactamase-resistant)	Fluoroquinolone Resistant	Cephalosporin or Penicillin/ b-lactamase inhibitor resistant

- **Resistant to 3rd generation cephalosporin antibiotics, require last-resort carbapenem or restricted antibiotics**
- **Patient treatments can range from $25,000-60,000**[2]

cUTI Management

	< 3 Hours	15 Hours	16 Hours	25 Hours+
Acuitas®	UTI +/- ID/ Resistance			
Culture + MALDI + AST		UTI +/-	ID	AST

OpGen's Acuitas® work flow provides Pathogen ID, level and antibiotic resistance profile in <3 hours
Vs.
Current patient work-up provides full lab results in 48-72 hours

OpGen

1. Diagnostic Microbiology and Infectious Disease 85 (2016) 459-465; estimates based on 85% Gram negative positivity rate
2. Company sponsored market research

Acuitas Lighthouse® Antibiotic Resistance Prediction

Final training set data and program update

- 2 million Acuitas Lighthouse data points evaluated from Merck SMART surveillance network
- 41 unique prediction algorithms coded into Acuitas Lighthouse reporting engine
- Final training set data supporting prediction algorithms[1]

	Sensitivity	Specificity	Accuracy	PPV	NPV
E. coli Average for 12 FDA approved cUTI antibiotics	91%	90%	91%	94%	86%
K. pneumonia Average for 12 FDA approved cUTI antibiotics	89%	83%	88%	94%	66%

- Completed successful Clinical Verification Q3 2018

OpGen

[1] Source: company data, in development, for Research Use Only

Acuitas® AMR Gene Panel

Molecular test detects five pathogens and 47 resistance genes, predicting resistance for 12 antibiotics

Pathogen Targets

- E. coli
- E. faecalis
- K. pneumoniae
- P. mirabilis
- P. aeruginosa

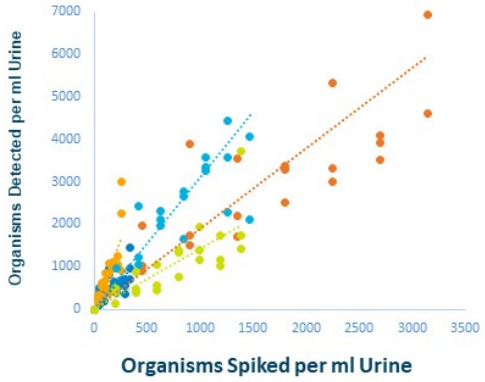
Semi-quantitates detected organisms and resistance genes to one of the following levels (in copies per ml of urine): $<10^3$, 10^4, 10^5, 10^6, $>10^6$

No semi-quantitation for colony isolates

Predicting Antibiotic Resistance in Gram-Negative Bacilli by Rapid Detection of Resistance Genes. G.T. Walker, et al. ASM/ESCMID Conference on Drug Development to Meet the Challenge of Antimicrobial Resistance. 2017

Species Identification

ID Assay	Isolates Correctly Identified	Expected Cross-Activity
E. coli	88 of 88 (100%)	some *Shigella* spp.
E. faecalis	65 of 65 (100%)	
K. pneumoniae/variicola	87 of 88 (99%)	
P. aeruginosa	91 of 91 (100%)	
P. mirabilis/vulgaris	84 of 85 (99%)	



OpGen

Acuitas® Product Portfolio Regulatory Pathways

	AMR Gene Panel u5.47 (Isolates) 510(k), FDA Class II (FDA Submission Q1/Q2 2019)	AMR Gene Panel u5.47 (Urine) *De Novo* 510(k), FDA Class II[2] (FDA Submission Q3 2019)	Acuitas Lighthouse Software *De Novo* 510(k), FDA Class II[2] (FDA Submission 2H 2019)
Indication[1]	Identification of bacterial nucleic acids and gene sequences associated with antimicrobial resistance in pure bacterial colonies[3] and detection of forty-seven gene sequences associated with antimicrobial resistance to nine antibiotic classes[3]. In vitro diagnostics and infection control.	Aid in the diagnosis of specific agents of urinary tract infections (UTI) for patients at risk of complicated UTI (cUTI). Semi-quantitation of Escherichia coli, Klebsiella pneumoniae, Proteus mirabilis, Pseudomonas aeruginosa and Enterococcus faecalis and forty-seven gene sequences associated with antimicrobial resistance to nine antibiotic classes[4]	Evaluation of data from the Acuitas AMR Gene Panel u5.47 assay using a series of predictive models and, based on species identified[5] to predict resistance for nine classes of antibiotics[4]
Sample Type	Isolates from any primary sample (blood, urine, lung, wounds, other)	Urine	
Clinical Trial	~900 stock isolates, 50 fresh isolates, 4 sites	1,500 fresh urine samples, ~300 contrived urine samples, 5-8 sites	2,000 globally and phenotypically representative stock isolates, 1,500 urine samples and resulting isolates, ~300 contrived urine samples

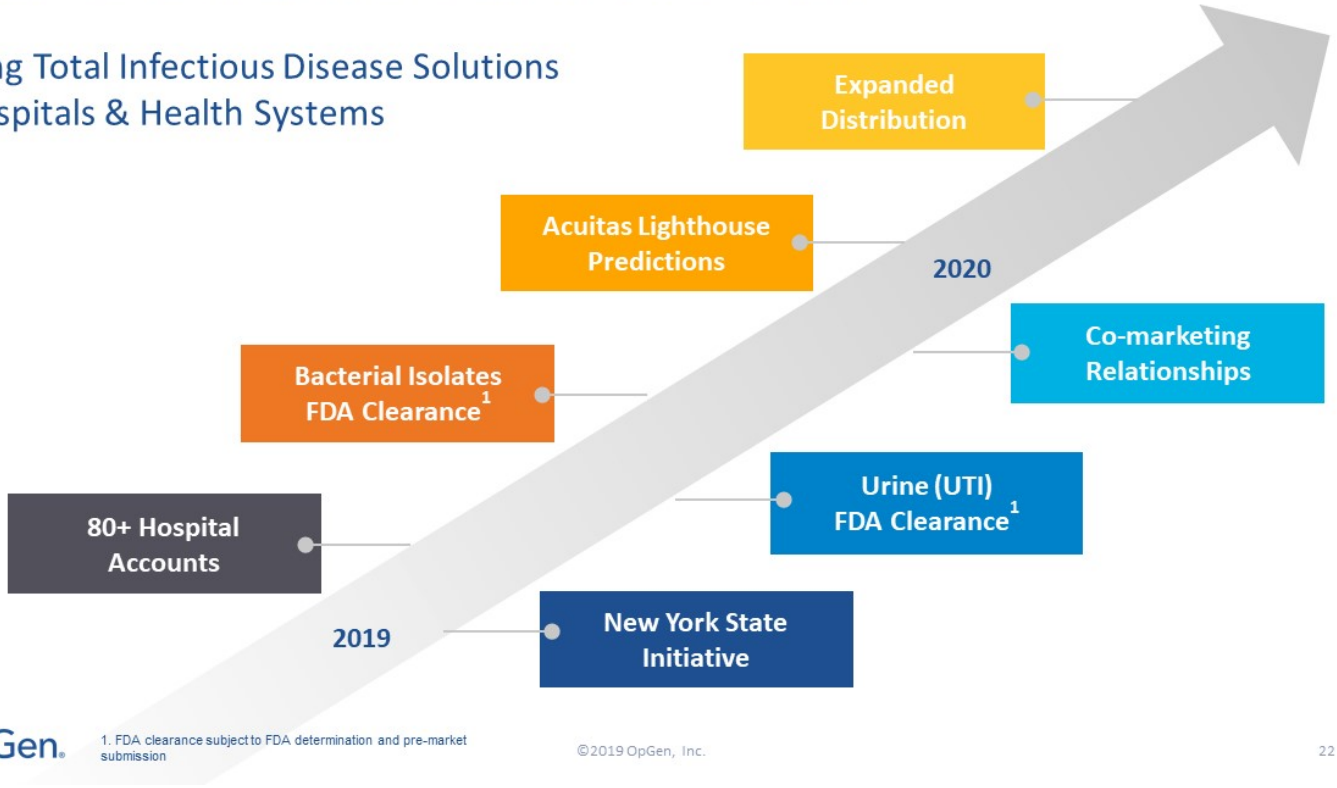
Footnotes:

1. Final labeling subject to negation with FDA upon actual Instruction for Use labeling.
2. Final classification subject to FDA determination.
3. For use with the following bacterial isolate types: *Enterobacteriaceae, Pseudomonas aeruginosa and Enterococcus feacalis*
4. Aminoglycosides, Carbapenems, Cephalosporins, Fluoroquinolones, Polymyxins, Penicillins, Sulfonamides, Trimethoprim, and Vancomycin.
5. For use with the following organisms: *Escherichia coli, Klebsiella pneumoniae, Proteus mirabilis, Pseudomonas aeruginosa, and Enterococcus faecalis.*

Commercialization Strategy

Acuitas Test and Software Commercialization

Building Total Infectious Disease Solutions for Hospitals & Health Systems



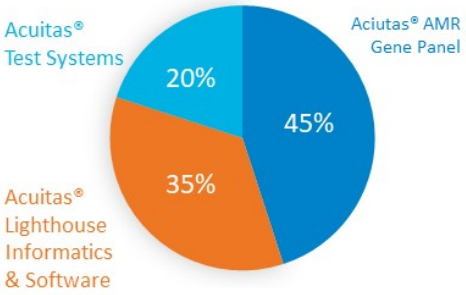
OpGen

1. FDA clearance subject to FDA determination and pre-market submission

Value-Generating Collaboration with NY Dept. of Health & ILÚM (Merck)

OpGen will work together with DoH's Wadsworth Center and ILÚM to develop an infectious disease digital health and precision medicine platform that connects healthcare institutions to DoH and uses genomic microbiology for statewide surveillance and control of antimicrobial resistance

- Implementation based on AMR Gene Panel and Acuitas Lighthouse Software
- $1.6 million in 2019 revenue
- Five year revenue potential, including expansion to additional states approximately $20 million[1]



"Groundbreaking partnership between ILÚM Health Solutions, a wholly-owned subsidiary of Merck & Co, OpGen, and the New York State Department of Health to develop a state-of-the-art research program to detect, track and manage antimicrobial-resistant infections at healthcare institutions statewide."

– Gov. Andrew Cuomo, Sept. 2018

1. These numbers are solely for illustrative purposes and do not represent any actual transactions. There is no assurance we will capture any share of the estimated revenues illustrated in any of the markets

Infectious Disease Digital Health & Precision Medicine Platform

NYC Pilot creates critical mass of metro area accounts and revenue generation starting Q1 2019

Q1 2019

- Three Tier 1 health systems: 35 hospitals, 12,000 beds, Acuitas Lighthouse® Software and AMR Gene Panel Systems installations
- Wadsworth DoH LDT validation

Q2 2019

- Hospital LDT validations and initial testing
- Customized Lighthouse Software and real time data monitoring

Q3 / Q4 2019

- Prospective AMR Gene Panel Tests

OpGen

Acuitas® Rapid Test Commercial Strategy

Economics: 300-500 bed hospital

5-10 tests per day

+

~3,000 tests per year

+

$150-$200 ASP

Estimated $500 million annual U.S. revenue opportunity[1]

Key Commercialization Milestones

1H 2019

NY State Precision Medicine Initiative

Acuitas®AMR Gene Panel (Isolates) FDA submission

2H 2019

Acuitas® AMR Gene Panel (Urine) submission

Acuitas Lighthouse® Software FDA submission

1. Assumes 1,000 hospitals with ≥ 300 beds and LTAC facilities. These numbers are solely for illustrative purposes and do not represent any actual transactions. There is no assurance we will capture any share of the estimated revenues illustrated in any of the markets

U.S. Commercial Opportunity and Expansion Plans

Expanding base of Acuitas® AMR Gene Panel Systems

- 12 system placements in Tier One Health Systems and service laboratories
- New York City Acuitas installations (3 Health Systems, 35 hospitals)

Acuitas Isolate/Urine indication initial launch

- Post FDA clearance promotional activities
- Expanded commercial organization

South America / Colombia

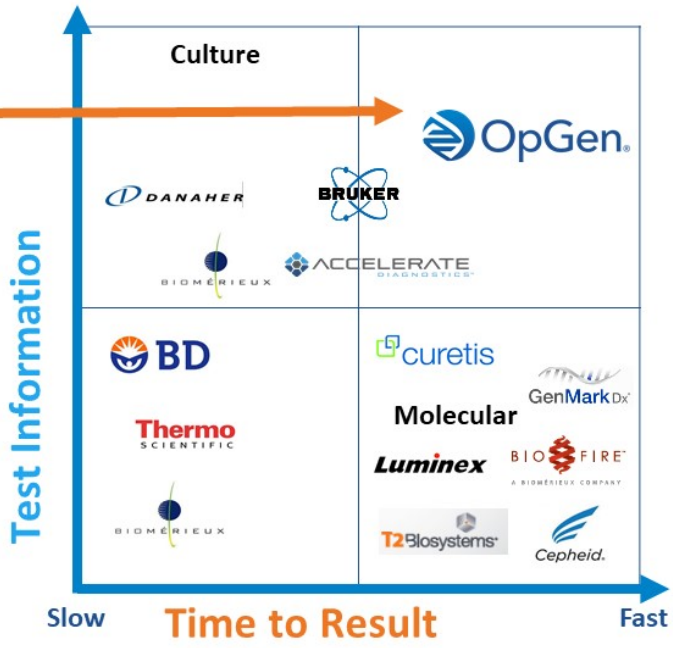
- INVIMA QuickFISH® regulatory clearance
- Clinical decision support software opportunity

US Acuitas Rapid Testing Markets ($millions)[1]	
State surveillance initiatives	$50
Direct urine testing and antibiotic resistance programs	$150
Isolate testing and expanded indications	$150
Acuitas® testing systems	$100
Total	**$450**

[1] Source: company estimates. These numbers are solely for illustrative purposes and do not represent any actual transactions. There is no assurance we will capture any share of the estimated revenues illustrated in any of the markets

Developing Differentiated Precision Medicine Capabilities

OpGen is the only offering combining rapid molecular testing with fast antibiotic-resistance results[1]



Established Molecular players are focused on pathogen detection with limited ability to do antibiotic decision making.

OpGen is paving the way by bringing a differentiated product to the diagnostics ecosystem.

OpGen

1 For Research Use Only. Not for use in diagnostic procedures.

Financial and Operating Highlights

	2018 (Ended Dec. 31) ($ Millions)	2017 (Ended Dec. 31) ($ Millions)
Revenue	$3.0	$3.2
Net Income (Loss)	($13.4)	($15.4)
Cash Balance	$4.6	$1.8

	Shares Outstanding	%
Common Stock	8,645,720	70%
Warrants[1]	3,525,797	28%
Equity Awards[2]	211,559	2%
Fully Diluted Shares Outstanding	12,383,076	100%

2018 Financial Highlights

- Recurring Revenue base of $2.4 million
- Completion of $860 thousand CDC Contract
- $11 million cash burn

Other Key Items

- 15,000 sq. ft. FDA cleared facility (R&D & Mfg.)
- 46 Employees
- 14 Acuitas® AMR Gene Panel System placements

Guidance

- Expect growth in top line revenue from Acuitas AMR Gene Panel products (2H19)
- Anticipate recognizing the first $1 million from NY State demonstration project milestones (1H19)

OpGen

[1] Average exercise price - $14.84/share
[2] Average option exercise price - $20.58/share

Experienced Management Team

Evan Jones
Chairman & Chief Executive Officer

Timothy Dec
Chief Financial Officer

Vadim Sapiro
Chief Information Officer

Terry Walker, Ph.D.
SVP, R&D

Michael Farmer
VP, Marketing

Upcoming Milestones

Building momentum for commercialization throughout 2019

Q1-Q3 19	Acuitas® Gene Panel IVD FDA submissions
Q1 19	South America commercial expansion
2H 19	Acuitas Lighthouse® IVD FDA submission
1H 19	Rapid IVD commercialization partnerships
2019	AMR Gene Panel publications/system placements
2019	NY State demonstration project milestones
2019	Acuitas® FDA Approvals

OpGen®

A New Light on Antibiotic Resistance

708 Quince Orchard Road
Gaithersburg, Maryland 20878 USA
P 301.869.9683
F 301.869.9684
CustomerSupport@OpGen.com