OpGen
Corporate Overview

September 1, 2022

Forward Looking Statements Disclaimer

This presentation contains forward-looking statements that are subject to many risks and uncertainties. These statements, among other things, relate to our business strategy, goals and expectations concerning our products, future operations, prospects, plans and objectives of management. The words “anticipate,” “believe,” “could,” “estimate,” “expect,” “intend,” “may,” “plan,” “predict,” “project,” “will” and similar terms and phrases are used to identify forward-looking statements in this presentation. These statements and other statements regarding our future plans constitute “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, and are intended to qualify for the safe harbor from liability established by the Private Securities Litigation Reform Act of 1955. Such statements are subject to risks and uncertainties that are often difficult to predict, are beyond OpGen’s control, and that 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, the success of our commercialization efforts, our ability to successfully, timely and cost-effectively develop, seek and obtain regulatory clearance for and commercialize our product and services offerings, the rate of adoption of our products and services by hospitals and other healthcare providers, the fact that we may not effectively use proceeds from recent financings, the continued realization of expected benefits of our business combination transaction with Curetis GmbH, the continued impact of COVID-19 on the Company’s operations, financial results, and commercialization efforts as well as on capital markets and general economic conditions, our ability to satisfy debt obligations under our loan with the European Investment Bank, the effect of the military action in Russia and Ukraine on our distributors, collaborators and service providers, our liquidity and working capital requirements, 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.

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.

OpGen Overview

Striving to innovate molecular microbiology

Fast	Comprehensive	Smart	Easy
			
Rapid Pathogen Detection For Life Threatening Infections	Broad Pathogen & Antimicrobial Resistance (AMR) Marker Coverage	AI-Powered AMR Prediction & Bioinformatics	Sample-To-Answer Platforms

OpGen's product portfolio

Next generation of diagnostic solutions

Together we improve patient care and fight AMR through cutting edge molecular diagnostics

unyvero	Acuitas AMR Gene Panel	ares
Syndromic Diagnostics	Broad AMR Detection	AI-Powered Bioinformatics & NGS Services

Our innovative solutions for infectious disease diagnostics comprise a suite of FDA-cleared rapid PCR-based panels as well as NGS-based services with AI-powered bioinformatics for molecular microbiology.

OpGen's strategic positioning and benefits

- **Well positioned to capitalize on global opportunities in infectious disease and rapid AMR detection**
- Proprietary molecular diagnostic tests and platforms
- Premier AI-powered bioinformatics solutions for multi-drug resistance diagnostics
- Global commercial channel capabilities & partners
- Financial leverage, operational synergies, and positive growth-driven business outlook

Unmet clinical needs and large available market opportunities

U.S. and European markets addressed through hospital-focused sales channels

- Pneumonia (HPN / LRT / LRT BAL)
- Urinary Tract Infections (UTI)
- Implant and Tissue Infections (ITI) / Invasive Joint Infections (IJI)
- Blood Culture (BCU)
- Intra-Abdominal Infections (IAI)

The current Unyvero portfolio and pipeline of cartridges according to management estimates target about 9 million patients annually in EU and U.S. with additional upside in Asia / Pacific and ROW markets.

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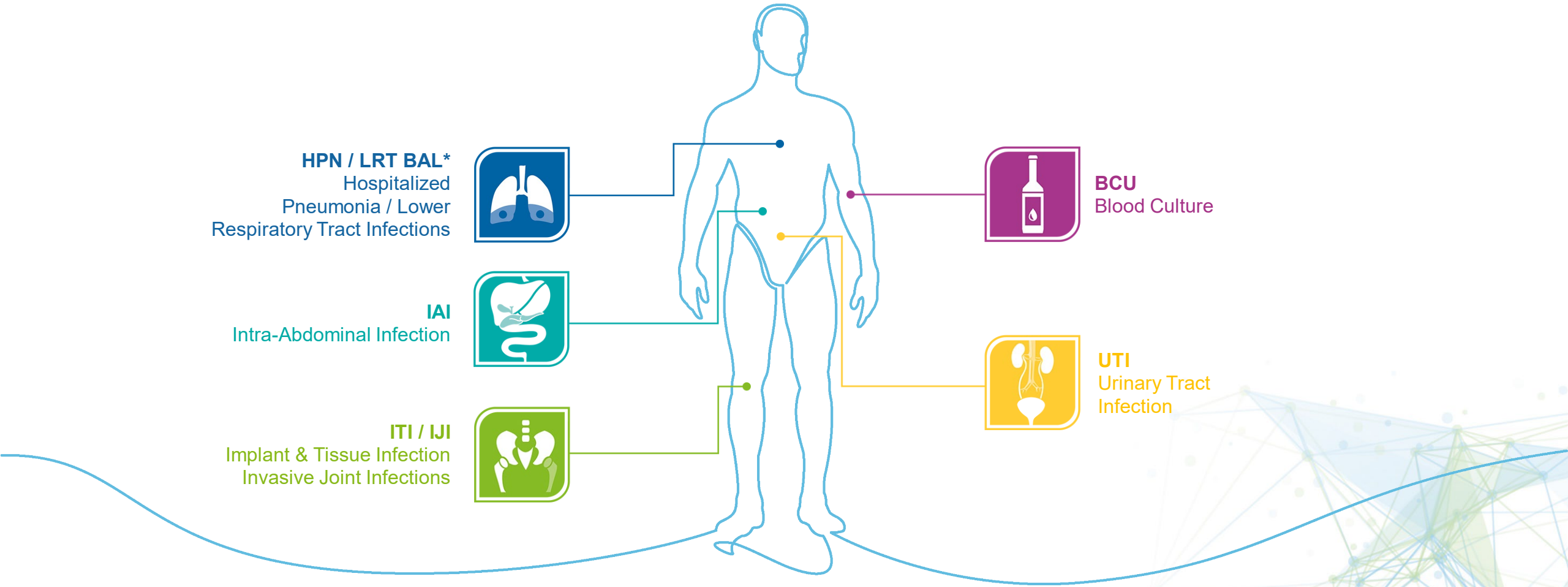
Broad Unyvero cartridge portfolio

unyvero



*Unyvero LRT / LRT BAL are FDA-cleared; all other products are CE-IVD marked or in development.

Unique and differentiated syndromic panels

unyvero

Cartridge	Indication area	Number of species and reportable targets	Sample types	Clearance status
HPN* 	Severe cases of Pneumonia	pathogens (21) covering >29 species and antibiotic resistance markers (17)***	Sputum, bronchoalveolar lavage, tracheal aspirates (tracheal and bronchial secretions)	CE-IVD marked Singapore (HAS) Thailand Malaysia
LRT & LRT BAL 	Lower Respiratory Tract Infections	LRT, LRT BAL: pathogens (19, 20) covering >35 species and antibiotic resistance markers (10, 10)	LRT: Tracheal aspirates LRT BAL: Bronchoalveolar Lavage (BAL)	LRT: FDA cleared (4/2018) LRT BAL: FDA cleared (12/2019)
ITI 	Severe cases of Implant and Tissue Infections	pathogens (29) covering >86 species and antibiotic resistance markers (17)	Synovial fluid, sonication fluid, exudate/pus, transudate, puncture fluid, tissue, bone fragments, swabs, drainage fluid, catheter tips	CE-IVD marked
UTI 	Severe cases of Urinary Tract Infections	pathogens (25) covering >86 species and antibiotic resistance markers (15)	Urine (mid-stream, suprapubic, fresh catheter), tissue	CE-IVD marked
BCU** 	Bloodstream infections	pathogens (34) covering >73 species and antibiotic resistance markers (16)	Positively flagged blood cultures	CE-IVD marked Singapore (HAS) Thailand
IAI 	Severe Intra-Abdominal Infections	pathogens (26) covering >82 species , toxins (2) and antibiotic resistance markers (22)	Ascites, peritoneal fluid, pancreatic juice, bile, tissue, puncture fluid, swabs, catheter/drainage tips, positive blood culture inoculated with ascites/puncture fluid	CE-IVD marked

*HPN: Hospitalized Pneumonia
**BCU: Blood Culture Application
***Difference between HPN and LRT (BAL) due to different reporting requirements between CE-IVD and U.S. FDA-cleared products. Reported number of targets are indicated in parentheses.

Current U.S. product offerings

Unyvero LRT & LRT BAL

- Sample-to-answer
  Results under 5 hrs
  2 min hands-on time
- Direct from native specimen
  FDA-cleared for bronchoalveolar lavage (BAL, mini-BAL) and tracheal aspirates
  Multiplex PCR with array detection
- Detects the most clinically relevant pathogens (incl. atypicals) &
  antibiotic resistance markers associated with lower respiratory tract infections
  including pneumonia
- Broadest carbapenemase resistance coverage
  The only FDA-cleared panel that detects *Pneumocystis jirovecii*
  Identifies difficult to culture *Mycoplasma pneumoniae*, *Chlamydia pneumoniae*, *Legionella pneumophila*

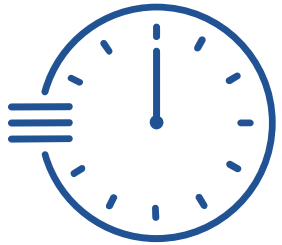
Critical results for life-saving treatment decisions

Current U.S. product offerings

Acuitas AMR Gene Panel

FDA-cleared AMR Gene Panel allows testing for a comprehensive panel of 28 genetic AMR markers in isolated bacterial colonies from 26 different pathogens

First two commercial customer contracts for Acuitas AMR Gene Panel signed

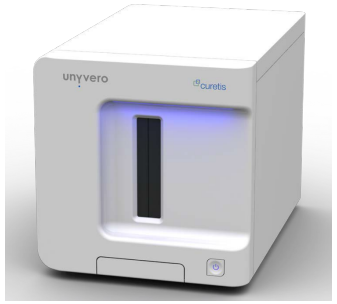
Detects AMR Genes in Most Deadly Superbugs	Identifies	Results under 3 hrs
		
E. coli, K. pneumoniae, P. mirabilis, P. aeruginosa, E. faecalis, as well as in several others: *C. freundii* complex, *C. braakii, C. freundii, C. koseri, C. werkmanii, C. youngae, E. cloacae* complex, *E. asburiae, C. cloacae, E. hormaechei, E. kobei, E. ludwigii, K. aerogenes, K. michiganensis, K. oxytoca, K. quasi-pneumoniae, K. variicola, M. morganii, P. rettgeri, P. stuartii, R. ornithinolytica, R. planticola, S. marcescens*	Broad panel of resistance genes Spanning 9 antibiotic classes Valuable diagnostic tool that informs about potential AMR patterns early and supports appropriate antibiotic treatment decisions	Directly from pure isolated colonies Multiplex PCR results in under 3 hours FDA cleared

Unyvero A30 *RQ*

Rapid sample-to-answer testing platform: instrument systems successfully completed final V&V and lifetime testing

Key Design Features

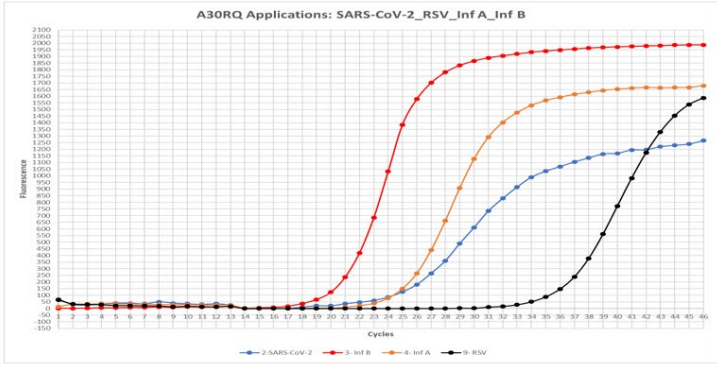
- Fully integrated, closed, sample-to-answer MDx platform
- Universal real-time PCR technology for low- to mid-plex testing
- Flexible cartridge fluidics for numerous chemistries and assay formats
- Fast turn-around time from ~30 to ~90 minutes
- Light-weight, stackable benchtop design with small footprint
- Modular and scalable from 1 to 8 cartridge slots
- Designed for ease-of-use and flexible deployment in labs and near-patient settings
- Attractive COGS for instruments and reagents



Platform available for partnering

Development Status

- Demonstrated clinical proof of concept from sample to answer with various assays including SARS CoV-2, Flu-A / Flu-B and RSV
- Manufacturing aspects fully specified and in development or implementation phase
- Curetis makes Unyvero A30 *RQ* platform available for partnering
- V&V testing for mechanical and electrical aspects as well as life-time testing ongoing



red curve:
Influenza B, Ct = 21

orange curve:
Influenza A, Ct = 25.5

blue curve:
SARS-CoV2, Ct = 25

black curve:
RSV, Ct = 36

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- Global commercial channel capabilities & partners
- Financial leverage, operational synergies, and positive growth-driven business outlook

Ares Genetics: AI-powered bioinformatics capabilities and laboratory services

ARESdb* proprietary AI-powered AMR knowledge base for molecular microbiology, AREScloud* is an advanced commercial web application for surveillance and infection prevention and control, Ares NGS laboratory and bioinformatics services*, in EU and the U.S.

Global ARESdb

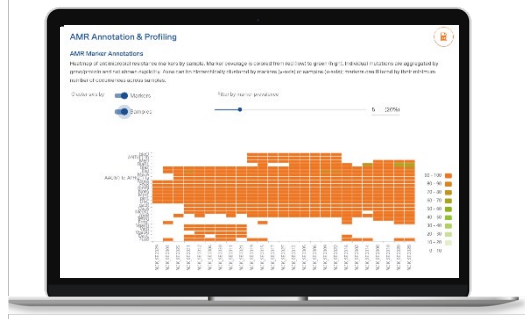
- Unique knowledgebase on antibiotic resistance markers building partly on Siemens microbiology strain collection
- Based on > 78,000 pathogens and associated resistance data for > 100 antibiotics
- Demonstrated up to > 99% accuracy for NGS based antibiotic susceptibility prediction in evaluation studies

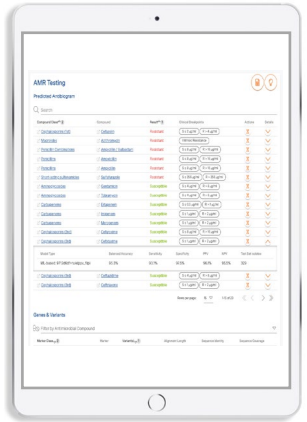
AREScloud

- An accurate and user-friendly bioinformatics portal for outbreak analysis and genomic surveillance of pathogens and AMR
- Automatically converts isolate bacterial genome data from short read and long read NGS platforms into actionable intelligence on infection prevention and control (comprehensive reports include pathogen ID, AMR, antibiogram prediction, outbreak clustering and other relevant information)
- The highly accurate prediction of antibiograms directly from bacterial genome data can transform how we control healthcare-associated infections

First RUO applications launched – multiple launches in 2022

- NGS service laboratory in Austria
- Launch of U.S. based service laboratory in August 2022
- Launched NGS services include **ARES**iss Express and **ARES**id – first customers for both services acquired
- Launched Software as a Service via **ARES**cloud platform – release of metagenomics functionality imminent





* In development; For Research Use Only. Not for use in diagnostic procedures.

Ares Genetics: Strategic collaborations and partnerships

Further increasing the value of ARESdb* and growing its proprietary contents

Global network of partners and customers include

- Globally leading microbiology, IVD & pharma companies and national agencies
- Closed strategic database access transaction in Q4-2021
- Qiagen RUO partnership is global and non-exclusive
- Sandoz master service agreement extended to January 2025 and expanding AMR collaboration
- Recently added partnerships with major U.S. hospitals as well as a major U.S. CRO and CLIA lab
- Conversations with multiple leading organizations in diagnostics and pharma ongoing

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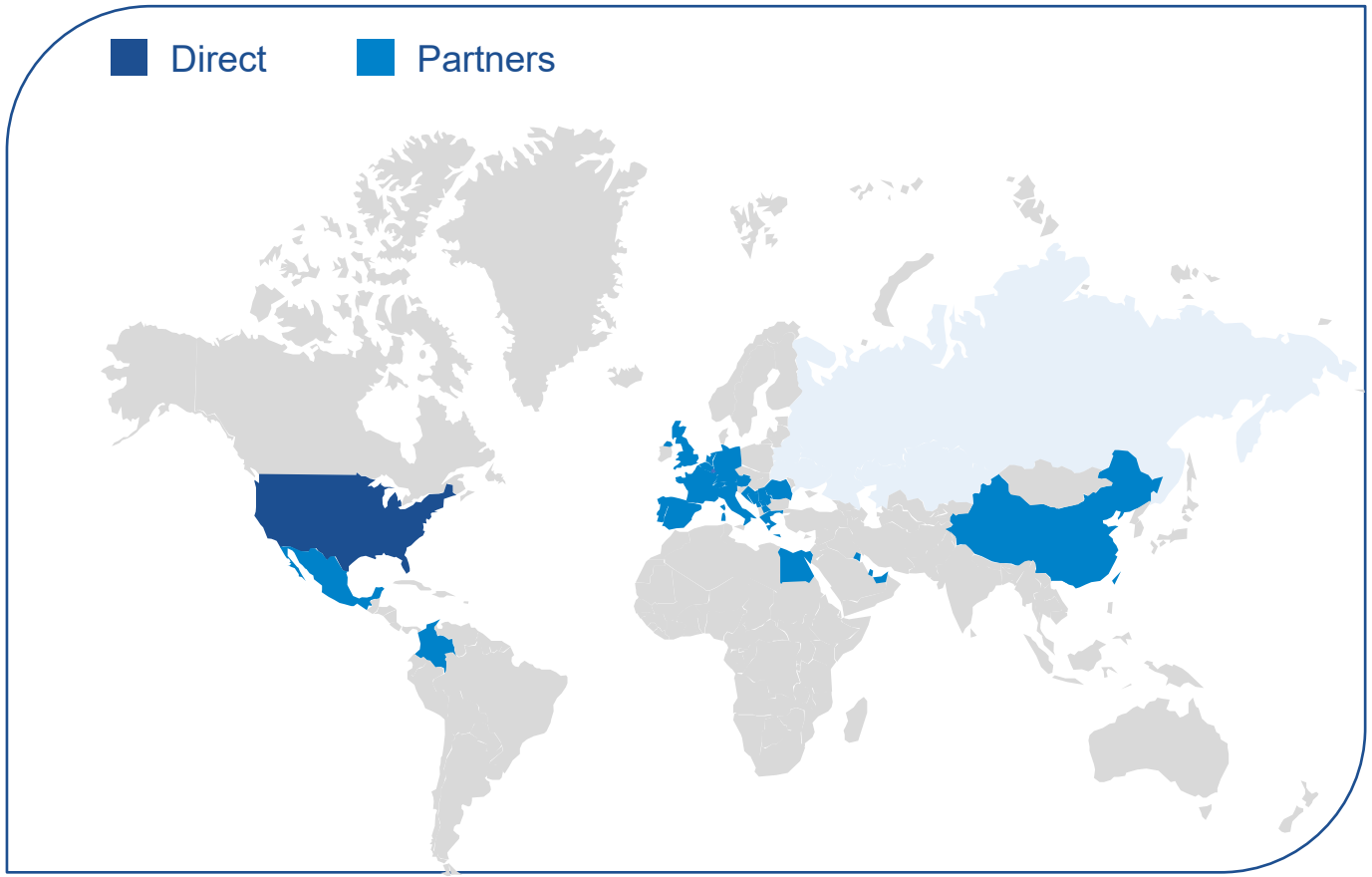
Dual commercial model

Direct in USA – Distribution in EMEA, China and Rest of World

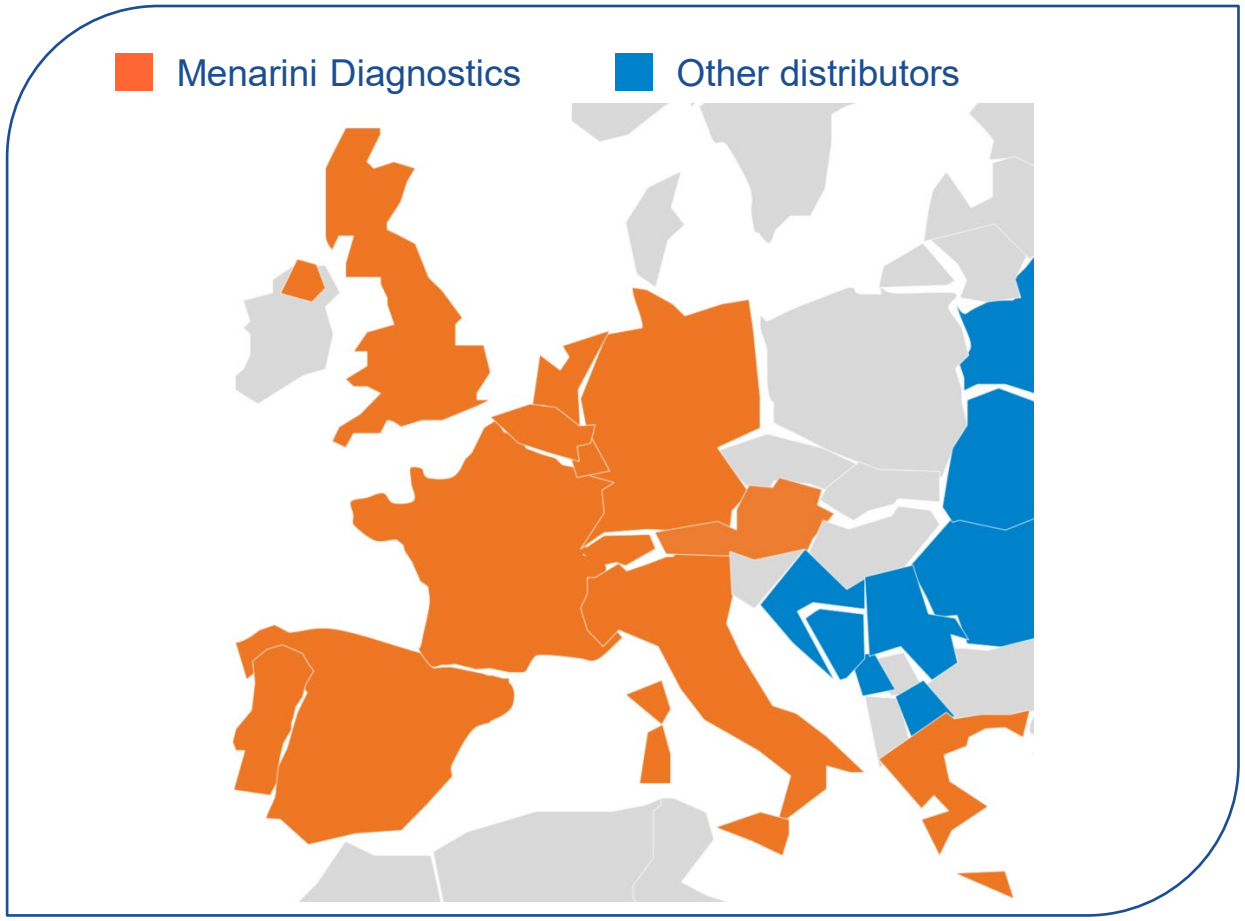


Expanding global commercial reach though direct sales in U.S. and via global distributors

- Direct sales in the U.S.
- European distribution through Menarini Diagnostics
- China distribution through Beijing Clear Biotech post NMPA clearance of pneumonia cartridge (pending)
- Distributors covering many countries in EU, ME, LATAM, and Asia
- Recently obtained full regulatory clearance for Unyvero system and cartridges in Colombia
- New distribution partnership with Leader Life Sciences for Unyvero system and cartridges in U.A.E. and Qatar
- New distribution partner Keis Group won Unyvero tender in Kosovo
- Distribution in Russia, Belarus, Ukraine, Kazakhstan currently suspended

Pan-European distribution via Menarini

Expanded to include Austria as well – currently 12 European countries



Menarini Diagnostics & Curetis Collaboration

- Covers entire Unyvero A50 product line
- Currently covered countries: **AT, BE, CH, DE, ES, FR, IT, LU, NL, PT, UK, GR**
- Option to expand relationship to further countries
- Agreed to significant increases in minimum order quantities for coming two years
- Finalized sale of several dozen Unyvero Systems already installed in many European countries to Menarini at residual fair market value

A.MENARINI diagnostics

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Financial considerations

Revenue

- FY 2021 revenues of approx. $ 4.3 million
- H1-2022 revenues of approx. $ 1.4 million
- Guidance for 2022: expect about 25% revenue growth from products and services globally– expect to gain significant traction direct sales in U.S. and acceleration in Ares Genetics related collaborations, services and software solutions

Cash position

- Cash position: approximately $ 16.6 million as of 6/30/2022
- Total cash raised in FY 2021 approximately $ 51.2 million gross proceeds
- OpGen and EIB (debt financing provider) have agreed to amortize debt tranche originally due in April 2022 over next 12 months with EUR 5.0 million paid in April 2022 and remaining approximately EUR 8.35 million being paid in twelve monthly installments of approximately EUR 0.7 million

Capital structure – shares outstanding

- Common Stock ~48.3 million shares (as of 8/31/2022)
- Common Warrants ~16.2 million (of which 7.5 million at $ 2.05 per share are from October 2021 financing)
- Equity Awards ~3.0 million (as of 8/31/2022)
- Fully Diluted Shares Outstanding (as of 8/31/2022) ~67.5 million
- S-3 universal shelf filed and effective for up to $150 million
- Commenced a new At The Market sales facility for up to $10.7 million in June 2022

Operations

Headquartered in the U.S. with global operations

Our Facilities

OpGen, Inc:
Corporate HQ and FDA registered R&D / manufacturing facility in Rockville, Maryland, USA; **~10,000 sq. ft.**

Curetis GmbH:

- FDA registered R&D, operations and G&A facility in Holzgerlingen, Germany; **~17,000 sq. ft**.
- FDA registered manufacturing facility in Bodelshausen, Germany; **~17,000 sq. ft.**

Ares Genetics GmbH:
Bioinformatics and NGS lab facility in Vienna, Austria; **~7,000 sq. ft.**

A Global Team

~105 employees globally

~65 FTEs R&D / Ops

~40 FTEs SG&A

OpGen Executive Leadership Team and Board

Team has decades of experience in precision medicine, molecular diagnostics and capital markets

Looking to add independent NED in 2022

Leadership Team

Oliver Schacht, Ph.D.
President & Chief Executive Officer

Johannes (Jan) Bacher
Chief Operating Officer,
Managing Director, Curetis

Albert Weber
Chief Financial Officer,
Managing Director, Curetis

Arne Materna
Managing Director & CEO,
Ares Genetics

Faranak Atrzadeh
Chief Marketing & Scientific Affairs Officer

Board Members

William (Bill) Rhodes (Chairman)

Prabhavathi (Prabha) Fernandes, Ph.D.

Don Elsey

Mario Crovetto

Oliver Schacht, Ph.D. (President & CEO)

Recent news flow

OpGen recently announced several key updates and milestones

Commercial

- OpGen launches Ares Sequencing Services in the U.S. from its Rockville, Maryland laboratory
- OpGen subsidiary Ares Genetics GmbH enters into collaboration agreement with the Belgian National Reference Centre at UZ Leuven for invasive *S. pneumoniae*
- OpGen and Menarini expanded their distribution agreement to increase annual minimum revenue commitment by Menarini in the coming two years as well as a sale of the entire pool of installed Unyvero systems across nine European countries
- OpGen signed its first commercial customer contract for the Acuitas AMR Gene Panel
- OpGen subsidiary Curetis and Leader Life Sciences enter into Unyvero distribution partnership for U.A.E. and Qatar

Clinical

- OpGen announces publication of results of Unyvero Hospitalized Pneumonia (HPN) Panel for detection of bacterial respiratory tract pathogens from serial specimens collected from hospitalized COVID-19 patients
- OpGen announces 1,000th patient sample enrolled in clinical trial for Unyvero Urinary Tract Infection Panel
- OpGen announces publication of results from major clinical study using Unyvero HPN Panel in the Lancet Respiratory Medicine

Financial

- Nasdaq grants OpGen 180-day extension until February 28, 2023, to meet minimum bid price requirement
- OpGen commenced a new At The Market (ATM) sales facility for up to $ 10.7 million, pursuant to which the company may sell, from time to time, in an “at the market” offering shares of its common stock

Upcoming milestones, news flow & catalysts

Commercial

- Commercial roll-out of Unyvero products and Acuitas AMR Gene Panel in the U.S.
- Unyvero A30 *RQ* further development milestones and partnering / licensing opportunities
- Further ARES partnering / licensing opportunities

Clinical

- China NMPA: supplementary clinical data to be generated in China (est. 600 samples) for submission and potential future approval for pneumonia cartridge and subsequent commercial launch – currently still pending COVID related delays to clinical study start
- Clinical trial updates and regulatory submissions for Unyvero UTI and IJI products
  - UTI: completion of clinical trial and full data read out towards FDA submission expected in H2-2022
  - IJI: initiate prospective multi center clinical trial in the U.S. on Unyvero A30 platform towards subsequent FDA submission

Financial

- Revenue growth from ARES service and software subscript business

Contact info

OpGen Inc. (Global HQ)

9717 Key West Avenue, Suite 100
Rockville, MD 20850 USA
+1 301.869.9683

InvestorRelations@opgen.com

Curetis GmbH

Max-Eyth-Str. 42
71088 Holzgerlingen, Germany
+49 (0)7031 49195-10

contact@curetis.com

Ares Genetics GmbH

Karl-Farkas-Gasse 18
1030 Wien, Austria
+43 (0)1 361 8880 10

contact@ares-genetics.com

Thank You!