



OpGen subsidiary Ares Genetics announces the strategic expansion of ARESdb proprietary contents

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- Following successful completion of Phase 1, Ares Genetics has now entered into Phase 2 of its collaboration with a leading U.S. CRO and reference lab, gaining access to 1,000 proprietary clinical isolates from key pathogens
- ARESdb contents has grown by more than 40% in a year

ROCKVILLE, Md., Dec. 14, 2021 (GLOBE NEWSWIRE) -- OpGen, Inc. (Nasdaq: OPGN, "OpGen" or the "Company"), a precision medicine company harnessing the power of molecular diagnostics and informatics to help combat infectious disease, announced today that its subsidiary, Ares Genetics (Ares), has successfully completed Phase 1 of its collaboration with a leading U.S. CRO and reference lab, originally announced in [August](#). During Phase 2, Ares will gain access to 1,000 proprietary genome and AST datasets thereby strategically enriching ARESdb with proprietary data for key pathogens.

Antimicrobial resistance (AMR) is a growing threat to public health believed to be causing 700,000 fatalities globally each year and billions of U.S. dollars in healthcare costs. Fueling the growing threat of AMR is the inappropriate use of ineffective antibiotics, impacting patient outcomes and promoting the emergence and spread of antibiotic resistant pathogens. Leading global health organizations are therefore calling for antibiotic stewardship through diagnostic innovations that promote the optimal use of antibiotic agents.

Conventional culture-based diagnostics can determine effective antibiotics through antibiotic susceptibility testing (AST); however, they tend to be slow and insensitive. Ares Genetics is addressing this problem from a different angle, using artificial intelligence to accurately predict directly from genomic data if a pathogen is susceptible or resistant to a given antibiotic. Central to this approach are the datasets required to train predictive models, comprised of genome and phenotypic AMR data that have been generated under controlled conditions and a robust model training and testing framework.

Ares Genetics has developed ARESdb, a leading database on AMR, and has published several scientific studies on the performance^{1,2} of its predictive models as well as important considerations of model training^{3,4}. ARESdb not only comprehensively collects known genetic markers for AMR, but also harbors more than 78,000 datasets essential for the development and training of predictive models. This is up by over 40% from around 55,000 datasets a year ago.

"ARESdb is central to our development of AI-powered applications for AMR prediction" stated Dr. Arne Materna, CEO of Ares Genetics. "It is an essential component of a number of our commercial solutions, including sequencing services offered through our service laboratory located in Vienna, Austria, and the recently launched [AREScLOUD](#) web application aimed at infectious disease experts and professionals in infection prevention and control. We are therefore very pleased to see that our efforts to increase access to clinically relevant and proprietary data through strategic collaborations is proving successful."

The value of ARESdb and machine learning for predicting antibiograms from genomic data is increasingly recognized by key opinion leaders around the world and has recently materialized in a strategic data access transaction under which a global corporation and leader in microbiology and infectious disease diagnostics was granted access to a narrowly defined subset of ARESdb corresponding to 1.1% of the current database contents.

Ares Genetics intends to further increase the value of ARESdb and grow its contents in the coming months and years through strategic collaborations with external partners and by supporting clinical trials conducted by its affiliates at OpGen. OpGen CEO Oliver Schacht added: "Ares will also be applying its next generation sequencing and AI-powered bioinformatics capabilities to analyze the clinical patient samples collected during OpGen's Unyvero UTI clinical trial in the U.S. which will further expand the unique and proprietary contents of ARESdb. We expect Ares to become one of the key drivers of growth for OpGen in the coming years as we also seek to expand the commercial footprint and activities of Ares in the U.S. beginning in January of 2022."

References

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2. Ferreira, I. *et al.* [Species Identification and Antibiotic Resistance Prediction by Analysis of Whole-Genome Sequence Data by Use of ARESdb: an Analysis of Isolates from the Unyvero Lower Respiratory Tract Infection Trial](#). *J Clin Microbiol* **58**, (2020).
3. Májek, P., Lüftinger, L., Beisken, S., Rattei, T. & Materna, A. [Genome-Wide Mutation Scoring for Machine-Learning-Based Antimicrobial Resistance Prediction](#). *Int J Mol Sci* **22**, 13049 (2021).
4. Lüftinger, L., Májek, P., Beisken, S., Rattei, T. & Posch, A. E. [Learning From Limited Data: Towards Best Practice Techniques for Antimicrobial Resistance Prediction From Whole Genome Sequencing Data](#). *Front Cell Infect Mi* **11**, 610348 (2021).

OpGen, Inc. (Rockville, MD, USA) is a precision medicine company harnessing the power of molecular diagnostics and bioinformatics to help combat infectious disease. Along with subsidiaries, Curetis GmbH and Ares Genetics GmbH, we are developing and commercializing molecular microbiology solutions helping to guide clinicians with more rapid and actionable information about life threatening infections to improve patient outcomes, and decrease the spread of infections caused by multidrug-resistant microorganisms, or MDROs. OpGen's product portfolio includes Unyvero®, Acuitas® AMR Gene Panel and the ARES Technology Platform including ARESdb®, using NGS technology and AI-powered bioinformatics solutions for antibiotic response prediction.

For more information, please visit www.opgen.com.

Forward-Looking Statements

This press release includes statements regarding Ares Genetics' strategic expansion of ARESdb and certain of its related collaboration arrangements. These statements and other statements regarding OpGen's 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 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 realization of expected benefits of our business combination transaction with Curetis GmbH, the success of our commercialization efforts, the impact of COVID-19 on the Company's operations, financial results, and commercialization efforts as well as on capital markets and general economic conditions, 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 press release and speak only as of the date of this press release. We undertake no obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events or otherwise.

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