

Joint Media Release – For Immediate Distribution

InSphero and DefiniGEN Receive Eurostars Grant to Develop Human Stem Cell-derived Screening Platform for Diabetes Drug Discovery

New platform to combine stem cell and CRISPR gene-editing technology with proven 3D cell culture techniques for producing standardized pancreatic islet disease models

Schlieren, Switzerland and Cambridge, UK– September 24, 2019 InSphero AG and DefiniGEN Ltd. today announced that they were awarded a €750K grant from Eurostars to develop a new drug-screening platform based on human pancreatic beta-like cells derived from induced pluripotent stem cells to support the rapidly growing need for human *in vitro* model systems for diabetes drug discovery and safety testing.

Diabetes is a global health burden that currently affects more than 415 million people worldwide and is predicted to increase to 642 million by 2040. It is one of the most intensively studied areas in academic and industrial research. Due to the central role of pancreatic islets in blood glucose homeostasis and metabolism, diabetes research currently depends largely on primary human islets for drug development processes, such as target identification, lead optimization and preclinical development. The availability of human islet isolates, however, is limited and donor-to-donor islet variability poses significant challenges for execution of reproducible studies.

“This partnership brings together two companies uniquely qualified to develop alternative, highly predictive human pancreatic islet models unconstrained by donor islet availability,” says Dr. Wolfgang Moritz, InSphero Head of External Collaborations and IP. “InSphero has set the industry standard for uniform, functionally robust, and long-lived human islet models that optimize use of precious donor islet materials. Our well-established 3D InSight™ Diabetes Platform will serve as a benchmark as we develop a ground-breaking portfolio of scalable, patient-derived diabetes models in collaboration with DefiniGEN that fully exploit their expertise in human induced pluripotent stem cell (hiPSC) derivation, CRISPR genome editing, and iPSC-directed differentiation.”

Dr. Filipa Soares, DefiniGEN Director of Strategic R&D says, “We anticipate this grant funding will enable DefiniGEN and InSphero to redefine how researchers test the effects of new diabetes therapies on beta cell function with transformative diabetes disease models for investigating disease pathology, identifying new markers and therapeutic targets, and assessing mechanisms of action.” The primary aims of this joint project are to demonstrate utility of hiPSC-derived beta cells for high throughput screening (HTS) applications, test advanced protocols for cryopreservation and 3D *in vitro* iPSC differentiation and maturation, develop wild-type and gene-edited type 2 diabetes (T2D) models for research, and introduce a novel, non-invasive, homogenous and HTS-compatible insulin secretion assay to efficiently monitor beta-cell function.

This project is funded by Eurostars, a joint program between EUREKA and the European Commission. It is co-funded by the national budgets of 36 Eurostars participating states and partner countries and by the European Union through Horizon 2020. In the 2014-2020 period it has a total public budget of €1.14 billion to support development of rapidly marketable innovative products, processes, and services that help improve lives of people around the world.

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About InSphero

InSphero is the pioneer of industrial-grade, 3D-cell-based assay solutions and scalable, scaffold-free microtissue technology. Through partnerships, InSphero supports pharmaceutical and biotechnology researchers in successful decision-making by recapitulating human physiology *in vitro*. Its robust and precisely engineered suite of 3D InSight™ human tissue platforms for liver toxicology, metabolic diseases, and immuno-oncology are used by major pharmaceutical companies worldwide to increase efficiency in drug discovery and safety testing. The scalable Akura™ technology underlying the company's 3D InSight™ Discovery and Safety Platforms includes 96- and 384-well plate formats and the Akura™ Flow organ-on-a-chip system to drive efficient innovation throughout all phases of drug development.

Visit <https://www.insphero.com/>. Follow on [Twitter](#) and [LinkedIn](#).

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About DefiniGEN Ltd

DefiniGEN has world-leading expertise in the area of stem cell-derived human cell production and metabolic disease modelling. The company has developed a best-in-class proprietary stem cell differentiation technology platform to generate mature, phenotypically relevant human hepatocytes, pancreatic cells and intestinal organoids. The platform can generate a range of unique metabolic disease models to accelerate preclinical drug development via the sourcing of patient samples and reprogramming to stem cells or alternatively using CRISPR gene-editing on stem cell lines and differentiating them on the technology platform. The models can deliver unparalleled insights into the biology of metabolic disease in a range of 2D and 3D formats which can integrate effectively into high-throughput screening programmes and investigative studies. The application of these cell models in drug discovery provide pharmaceutical companies with more predictive *in vitro* cell tools to optimize the development of safe and efficacious therapies for life-threatening metabolic diseases.

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