

About Us

- ▶ Over 100 employees at 3 research sites near Cambridge, UK, Detroit and South San Francisco, USA
- ▶ More than 15 years dedicated to human tissue and human cell-based drug discovery
- ▶ An established global network of clinical sites for diseased and normal human biospecimens
- ▶ Biorepositories of high quality human tissue and biofluid samples
- ▶ Integrated biological services from human target validation through to product support and NDA submission
- ▶ ISO 9001 certified tissue processing facility
- ▶ GLP immunohistochemistry laboratory
- ▶ Licensed by the UK Human Tissue Authority
- ▶ Global pharmaceutical, biotechnology, academic and diagnostics clients

Related Services for Diabetes Research

- ▶ CustomMapping™ RT-PCR gene expression studies of isletOrganDOT cultures pre- and post- treatment with test agents
- ▶ Measurement of other mediators, e.g. glucagon release from pancreatic α cells (under development)
- ▶ Immunohistochemical assessment of the expression and distribution of targets of interest at the protein level
- ▶ Supply of human pancreatic and other related tissues (e.g. kidney) from patients with and without diabetes (Asterand's XpressBANK™ offering)
- ▶ Supply of fresh pancreatic islets from clinical sites in the United States via Asterand's custom procurement team

Asterand's Human Drug Discovery Services

- ▶ Human gene expression profiling by qRT-PCR
- ▶ Human target validation studies on diseased and normal tissues using ISH and IHC
- ▶ Pharmacological profiling of test agents on human primary cell assay systems across various diseases
- ▶ Proprietary phenotypic primary cell based platform BioMAP® for the on-and off-target pharmacological profiling of test agents

Please contact our Business Development Directors in the following regions to discuss your requirements:

United States

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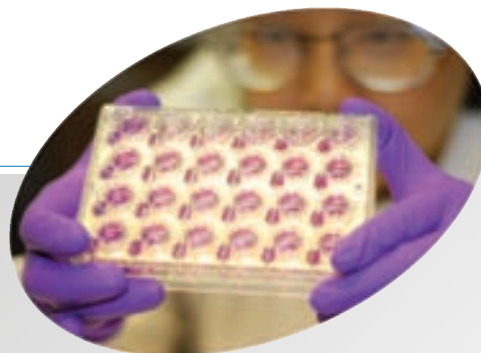
San Francisco

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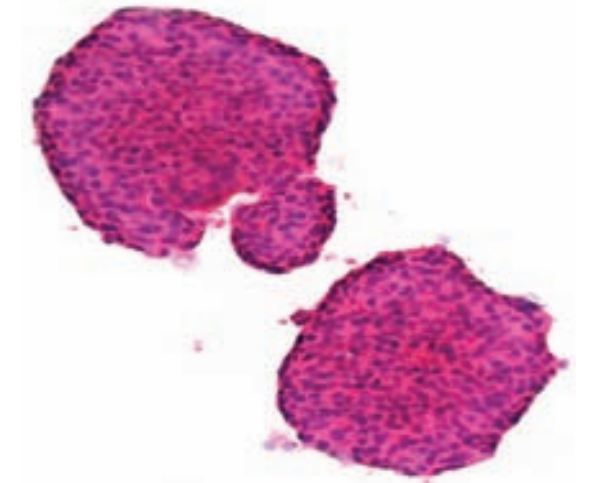
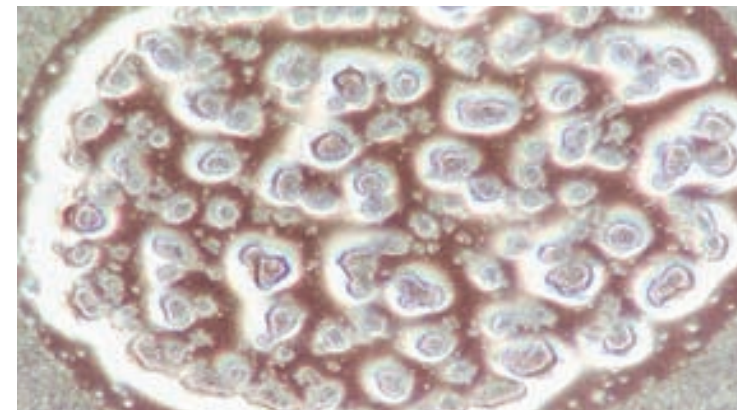
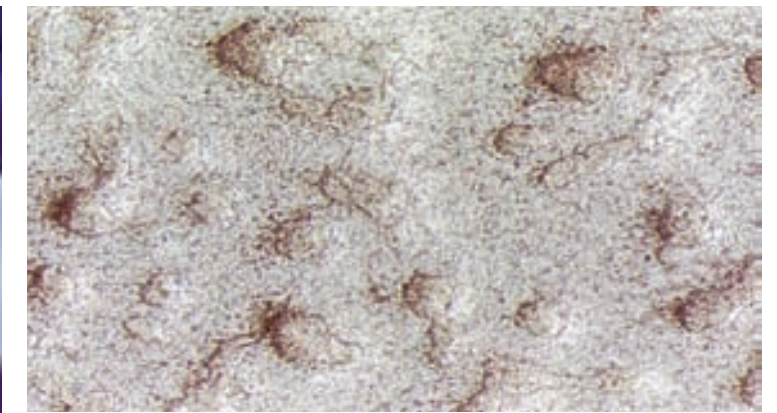
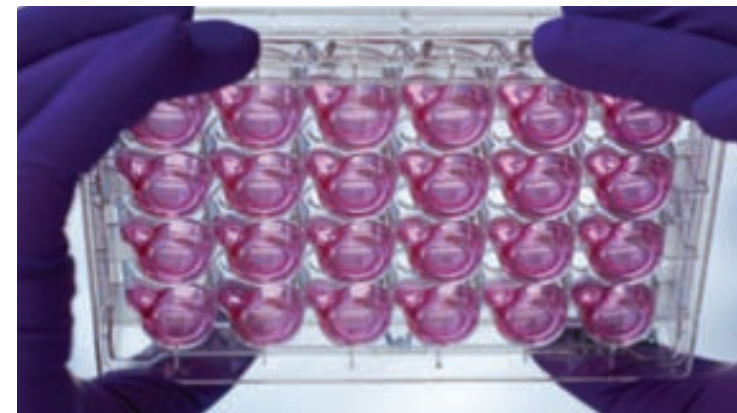
Alternatively, please post your inquiry to us via advantage@asterand.com.

Please visit our website at www.asterand.com/organDOT for further information.

OrganDOT™ technology as originally developed by Capsant Neurotechnologies Ltd.



The Human Islet OrganDOT™ System

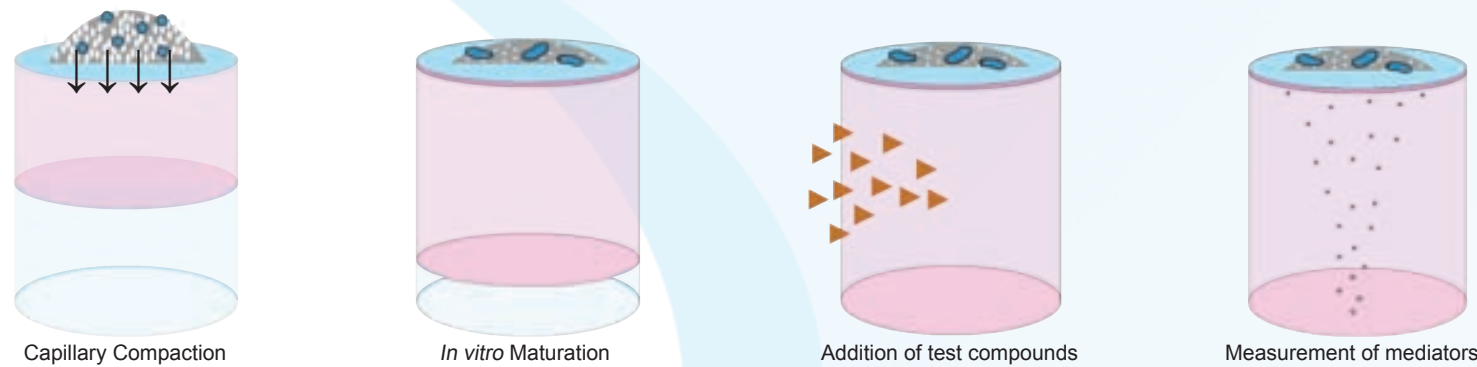


Asterand's Human Drug Discovery Services

Introducing a Novel Platform For Profiling Compounds For Diabetes

Until recently, cell based disease models to evaluate the effects of compounds to treat diabetes were limited to cell lines and rodent isolated islets. Asterand, a pioneer in the development of human tissue based predictive disease models, has established the *isletOrganDOT™* system. This three-dimensional (3D) tissue culture system models, under physiological and pharmacological control, the release of mediators from human islet cells, for example insulin from β cells. The system provides actionable data on the effects of test compounds in a rapid and reproducible manner.

isletOrganDOT™ cell embedding technique



How the OrganDOT™ System Works

Freshly isolated and intact human pancreatic islets sourced from multi-organ transplant donors are dispersed into single cells and embedded on a membrane. Fed basolaterally with culture medium, over time the cells re-aggregate and retain islet-like functionality for up to 14 days. *isletOrganDOTs* can be challenged with physiological and pharmacological agents and secreted mediators measured.

Key Features: Retained Functionality, Higher Throughput and Reliable Results

- ▶ *isletOrganDOTs* are human reconstituted primary islets that retain functionality for up to 14 days in culture, allowing for carefully timed and repeat dosing regimens
- ▶ *isletOrganDOTs* are cultured on 24-membrane insert plates, enabling parallel testing of control and test agents
- ▶ Up to ten 24-membrane insert plates can be run in one study, allowing for the flexible testing of batches of early hit compounds to in-depth profiling of lead/pre-clinical compounds
- ▶ The small volume culture system minimizes compound requirements
- ▶ Medium changes and testing regimes are applied basolaterally, reducing disruption to the *isletOrganDOTs*

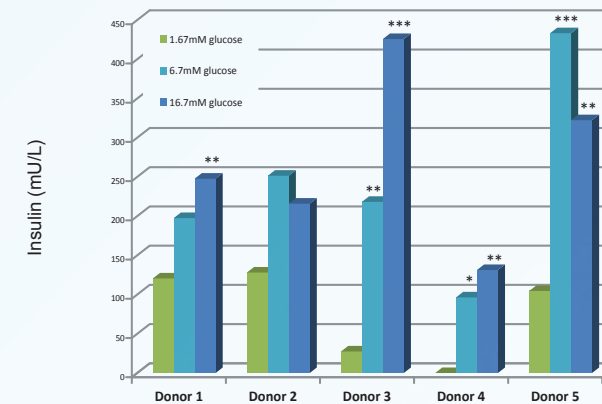


Working With Asterand

For the last 15 years, Asterand has established a human approach to drug discovery based on the use of human tissues consented for research. Asterand is dedicated to providing clients with high quality solutions to progress their drug discovery programs with greater confidence. We provide our clients with:

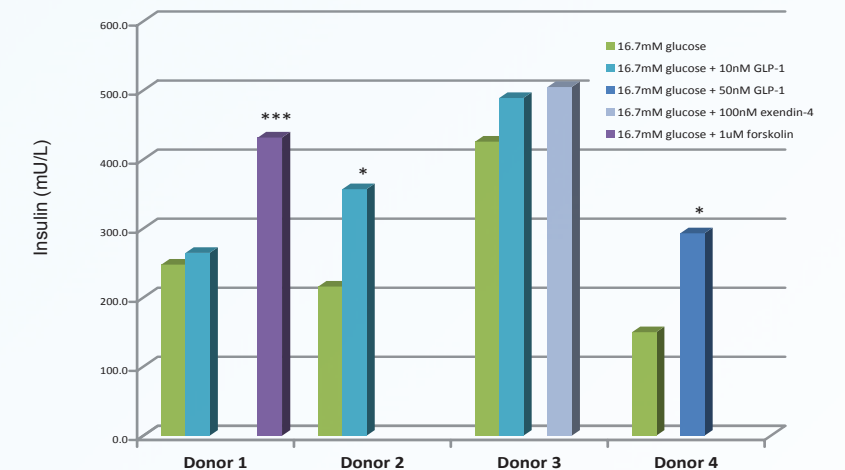
- ▶ **Expert consultation** throughout your study with dedicated and experienced Asterand personnel
- ▶ A full study protocol is produced and **customized** to your particular requirements
- ▶ **Regular communication** during the course of your study from your Asterand Project Manager
- ▶ **A detailed Final Report** along with **expert interpretation** of the results

Glucose stimulation of insulin



Glucose-stimulated insulin secretion assays performed with *isletOrganDOTs* prepared using fresh islets from 5 different donors. Consistent stimulation of insulin secretion is detected with increased glucose concentration.

Effect of secretagogues



Effect of various secretagogues (where tested) on glucose-stimulated insulin secretion from *isletOrganDOTs* (mean data, triplicates; * and *** = statistically significant difference from the respective glucose only).

Advantages of OrganDOT™

- ▶ Robust design suitable for early hit to in-depth lead/pre-clinical compound profiling- reducing the need to interpret results obtained from multiple assay platforms
- ▶ Simultaneous testing of multiple dosing regimens and schedules – delivers comprehensive compound profiles within a shorter time period
- ▶ Validated and quality controlled platform; each *isletOrganDOT* batch can be pre-screened to ensure experimental suitability