Meta CELL

CELL METABOLISM MADE EASY

Drug failure and high development cost (est. €2.3bn/new drug) have driven enormous growth in market need for scientific tests and disease models that better translate between the laboratory and bedside. Critical tests are either not available, or only available on a few large, expensive instruments. In addition, there is a public demand for a reduction in animal testing and a drive towards better models of *in vitro* (laboratory or controlled environment) rather than *in vivo* tests.

The MetaCell-TM project H2020 FTI €2.5m funding enables the consortium of Luxcel Biosciences Ltd, Axiogenesis AG and BMG LABTECH GmbH to develop a physiologically relevant cell-based assay platform for metabolism in preclinical drug discovery and development, creating the Gold Standard, within a laboratory *in vitro* setting. This project is supported by two highly respected research institutions, Oxford University, UK and Imperial College London, UK.

Early Applications for MetaCell:

1. Ischaemia/reperfusion injury:
   Rapid de- and re-oxygenation (CLARIOstar ACU) is coupled to phenotypically mature iPS-derived cardiomyocytes (Cor.4U, or tumor models). Real-time cellular O_2 concentration is measured in 96- or 384-well format assays (MitoXpress®).

2. Multiplexing cardiac function and metabolism:
   MetaCell enables the multiplex overlay of key metabolic parameters, with flexible multi-mode reader functionality (CLARIOstar) and easy to use, mix and read assays (MitoXpress®).

3. Metabolic Profiling:
   MetaCell enables characterisation of a cell´s energy phenotype, allowing the development of maturation media and more physiologically relevant cell models.

LUXCEL BIOSCIENCES

BMG LABTECH
The Microplate Reader Company

axioGENESIS

Imperial College London

UNIVERSITY OF OXFORD

Luxcel Biosciences Ltd

- One stop shop for *in vitro* cell metabolism assay kits
- Simple, easy to use 96/384 well format
- Flexible and accessible for use on any fluorescent plate reader
- Empowers cell biology research under physiologically relevant conditions

BMG LABTECH GmbH

- German engineered high-performance microplate readers
- User friendly, two-click approach for data acquisition and analysis
- O_2 and CO_2 gas regulation for *in vitro* hypoxia and ischemia/reperfusion conditions

Axiogenesis AG

- Physiologically relevant: well characterized and validated cell model
- Quantity & consistency for HTS in preclinical safety/ toxicity and drug discovery
- Ready-to-use and easy to implement: get your results in 3 days or less
- Predictive, validated and customized