

Launch of new European Stem Cell Bank

EBiSC, the European Bank for induced pluripotent Stem Cells announces the public launch of its on-line catalogue of induced Pluripotent Stem Cells (iPSCs) which are available to academic and commercial scientists for use in disease modelling and other forms of pre-clinical research. (<https://cells.ebisc.org>). The initial collection of iPSCs available from the catalogue have been generated from a wide range of donors representing either specific disease backgrounds or healthy control donors. The catalogue has been created by the EBiSC consortium - a public-private partnership project supported by the Innovative Medicines Initiative (IMI), of 27 organisations, comprising pharmaceutical companies who are members of the European Federation of Pharmaceutical Industries and Associations (EFPIA), small & medium-sized enterprises (SMEs) and academic institutions (www.ebisc.eu).

First pioneered in 2006, human iPSC technology makes it possible to study a disease under laboratory conditions. Patients, who might for example have a neurodegenerative illness or heart disease, provide a skin or blood sample from which iPSCs are made by introducing 4 genes usually expressed in stem cells. Brain, heart and many other types of cell can be produced from these stem cells in the lab and used to discover what is going wrong in these equivalent cells in the patient. This “disease in a dish” research avoids having to take potentially dangerous patient biopsies. Because human disease models are usually preferable to animal models, iPSC cell technology is expected to lead to fewer experimental animals being needed in future disease modelling research and the avoidance of interspecies differences .

The rapid advance of iPSC generation technology now permits many laboratories to make their own cell lines. However, researchers rarely have the resources needed for the long term storage and distribution to other researchers of these valuable research tools, leading to duplication of work, delays to research and the generation of erroneous research data. EBiSC has been established to build a robust, reliable supply chain for iPSC cell lines, including the generation of disease specific, control and gene edited cell lines through standardised, quality controlled cell line expansion and internationally recognised processes for banking and worldwide distribution. A single user agreement also simplifies the material transfer process both for depositors and customers, ensuring that ownership of deposited lines remains with the depositor.

Cell lines in the current EBiSC catalogue have been made and deposited by EBiSC partner labs and a number of external organisations. This currently includes neurodegenerative diseases (Frontotemporal Dementia, Motor Neurone Disease - also known as ALS - and Huntington’s Disease), eye and heart diseases, and lines from healthy control donors for age and sex matching. During the next months, new cell lines will enter the catalogue through collaborations with partner research consortia and through new cell line creation from within EBiSC. This will see a large number of Parkinson’s and Alzheimer’s Disease lines being introduced together with lines for diabetes and cardiovascular research as well as muscular dystrophies and neuropathic pain. In many cases the

iPSC lines will be complemented by “isogenic control lines” in which the disease causing mutation has been corrected by gene editing. These control cell lines with the same genetic background as the patient should make it easier for researchers to understand how a particular gene mutation causes a given disease, and this in turn opens the door for potential therapies to be developed.

Aidan Courtney, CEO of Roslin Cell Sciences stated “The launch of the on-line catalogue will allow EBiSC to support stem cell researchers in Europe and elsewhere. The organisations making up the EBiSC Consortium are each leaders in their own area of expertise. We have been fortunate to have the support of IMI to combine these skills from across Europe to create this major research resource.”

About the Fraunhofer Institute for Molecular Biology and Applied Ecology IME

The Fraunhofer IME conducts research in the field of applied life sciences from a molecular level to entire ecosystems, in the areas of pharmacy, medicine, chemistry, agriculture, as well as environmental and consumer protection. Our mission is the development and use of novel technologies for diagnosis and treatment of human and animal diseases as well as the protection of crop plants and food sources.

With our state-of-the-art infrastructure including GMP production facilities we aim at taking innovative products closer towards the market, develop enabling technologies and provide scientific services to partners from academic institutions and industry.

Since 2014 the IME-ScreeningPort with its labs in Hamburg, Germany, is part of the institute. IME-ScreeningPort focusses on research in the areas of early Drug Discovery, Stem Cell Biology, Biomarker Discovery and Bioinformatics. The Fraunhofer IME has approximately 650 employees working at its laboratories in Aachen, Schmallenberg, Münster, Gießen, Hamburg, Frankfurt and its subsidiary research centers in the USA and in Chile.

For more information, see www.ime.fraunhofer.de.

Project Partners

EFPIA companies

- Neusentis, a Research Unit of Pfizer Ltd, UK (Project Coordinator)
- Novo Nordisk A/S, Denmark
- AstraZeneca AB, Sweden
- H. Lundbeck A/S, Denmark
- Janssen Pharmaceutica NV, a Pharmaceutical Company of Johnson & Johnson, Belgium
- UCB Biopharma SPRL, Belgium
- Bayer Pharma AG, Germany
- Eli Lilly and Company Ltd, UK

SME's

- Roslin Cell Sciences Ltd, UK (Manager of the public partners)
- ARTTIC SAS, France
- DefiniGEN Ltd, UK
- Douglas Connect GmbH, Switzerland
- Bioneer A/S, Denmark

Universities, research organisations, public bodies, non-profit groups

- University of Edinburgh, UK
- Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V., Germany:
 - Fraunhofer-Institut für Biomedizinische Technik (IBMT)
 - Fraunhofer-Institut für Molekularbiologie und Angewandte Oekologie (IME Screening Port), Germany
- Genome Research Limited (Wellcome Trust Sanger Institute), UK
- European Molecular Biology Laboratory (European Bioinformatics Institute), Cambridge, UK
- Charité Universitätsmedizin Berlin, Germany
- University of Newcastle, UK
- Klinikum der Universität zu Köln, Germany
- Leibniz Universität Hannover, Germany
- Koninklijke Nederlandse Academie van Wetenschappen (The Hubrecht Institute), The Netherlands
- University College London, UK
 - Department of Biochemical Engineering

- Division of Biosciences – Department of Cell and Developmental Biology
- Great Ormond Street Hospital Children's Charity – Institute of Child Health
Developmental Neuroscience
- Universitätsklinikum Bonn, Germany
- UK Government Department of Health
 - Culture Collections of PHE, UK
 - National Institute for Biological Standards and Control, UK
- Instituto de Salud Carlos III. (Spanish Stem Cell Bank), Spain
 - Fundación Publica Andaluza Progreso y Salud
 - Fundación Privada Centre de Medicina Regenerativa de Barcelona
 - Fundación Inbiomed

For the EBISC iPSC catalogue, see <https://cells.ebisc.org>

For further information on EBISC and the project partners see www.ebisc.eu.

For more information on the Innovative Medicines Initiative (IMI), visit www.imi.europa.eu

Press contacts

Dr. Jason King, Roslin Cell Sciences EBISC Coordinator

Email: ebisc@eurtd.com

www.ebisc.eu

About the Innovative Medicines Initiative

The Innovative Medicines Initiative (IMI) is working to improve health by speeding up the development of, and patient access to, the next generation of medicines, particularly in areas where there is an unmet medical or social need. It does this by facilitating collaboration between the key players involved in healthcare research, including universities, pharmaceutical companies, other companies active in healthcare research, small and medium-sized enterprises (SMEs), patient organisations, and medicines regulators. This approach has proven highly successful, and IMI projects are delivering exciting results that are helping to advance the development of urgently-needed new treatments in diverse areas.

IMI is a partnership between the European Union and the European pharmaceutical industry, represented by the European Federation of Pharmaceutical Industries and Associations (EFPIA). Through the IMI 2 programme, IMI has a budget of €3.3 billion for the period 2014-2024. Half of this

comes from the EU's research and innovation programme, Horizon 2020. The other half comes from large companies, mostly from the pharmaceutical sector; these do not receive any EU funding, but contribute to the projects 'in kind', for example by donating their researchers' time or providing access to research facilities or resources.

More info on IMI: www.imi.europa.eu

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At Pfizer, we apply science and our global resources to bring therapies to people that extend and significantly improve their lives. We strive to set the standard for quality, safety and value in the discovery, development and manufacture of health care products. Our global portfolio includes medicines and vaccines as well as many of the world's best-known consumer health care products. Every day, Pfizer colleagues work across developed and emerging markets to advance wellness, prevention, treatments and cures that challenge the most feared diseases of our time. Consistent with our responsibility as one of the world's premier innovative biopharmaceutical companies, we collaborate with health care providers, governments and local communities to support and expand access to reliable, affordable health care around the world. For more than 150 years, Pfizer has worked to make a difference for all who rely on us. To learn more, please visit us at www.pfizer.com.

About Roslin Cell Sciences

Roslin Cell Sciences is committed to the production of high quality induced pluripotent stem cells for use in drug discovery. Induced pluripotent stem cell technology provides a platform to enable drug discovery research to be accelerated and more targeted. Utilising human cell lines from patients with different disease related genetic backgrounds provides the opportunity to evaluate drug efficacy and ultimately leading to approaches to personalised medicine. We offer a complete cell-based contract research service for iPSC production. We have the capacity to generate and handle large numbers of cell lines for use in fundamental research and drug development. To find out more please visit <http://roslinecells.com/roslinecellsciences/>

Notes to Editors

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