European Bank for induced pluripotent Stem Cells

Creating a self financing stem cell repository for Europe

The EBiSC - European Bank for induced pluripotent Stem Cells project has received support from the Innovative Medicines Initiative Joint Undertaking under grant agreement n° 115582, resources of which are composed of financial contribution from the European Union’s Seventh Framework Programme (FP7/2007-2013) and EFPIA companies’ in kind contribution. www.imi.europa.eu
What is the EBiSC project?

A €35 million, IMI funded project through which 26 leading European organisations will establish a central facility for the collection, testing and distribution of iPS cells to researchers.
Who is in the consortium?

- 6 large pharma companies
- 6 SMEs
- 8 Universities
- 5 public agencies
- 1 charity funded institute
- 9 countries

Large enough to have a structuring effect on the EU Research Landscape

Manageable as a multi-centre consortium
Why create EBiSC?

Without EBiSC:

iPSC based projects which address only one research effort = a missed opportunity

Create larger number & diversity of iPS cells to meet needs of other projects
Why create EBiSC?

**With EBiSC:** better use of research assets

- Research projects creating iPSCs
- Provide samples of iPSC lines to EBiSC
- Creates distribution stocks & ensures quality
- Get iPSCs of known quality, faster & at less cost

EBiSC

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What makes EFPIA member engagement so important?

With pharma partners:

EBiSC’ cell line collection will be configured to match industry needs = EU hub supporting large & small industry collaboration

- Clinic: Volunteer donates tissue
- iPSC specialist: Derive iPSC lines from tissue
- Replication: Creates large numbers of cells
- Differentiation: Creates cells of specific types
- Physiological cells used in research

Create select cell performance data integrating clinical, genetic information of use in other projects
What will EBiSC do?

EBiSC: improving the research landscape in Europe

- Research projects creating iPSCs
- EBiSC
- Other researchers

Establish **central facilities** which use best cell culture technologies to operate at scale

- Consent forms & contracts which meet needs of all stakeholders
- Common standards for processing and testing cell lines

Data management system which provides extensive data to users but controls access

Create a catalogue of cell lines which meet user needs

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How is the initial cell line collection constituted?

- **‘Hot Start’ cell lines**
  - Existing at 7 derivation centres with known disease phenotype
  - Unrestricted for commercial research use
  - All legal/ethics documentation in place
  - Small number of vials ready with which to make distribution stocks

- **Sanger lines**
  - HIPSCI project – minor genetic variants underpinning cellular phenotype
  - DNA Damage & repair – cancer iPSC lines of rare inherited defects in DNA repair mechanisms

- **New EBiSC Commissioned Lines**
  - Project funds, allocation driven by known urgent user demand
  - Maximise utility & scientific value of the Foundational Collection

- **IPSC lines from other large scale global projects**
  - eg FP7, H2020, IMI—1, IMI-2

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**Foundational collection**

- ‘Hot Start’ lines from 7 iPSC centres
- Sanger HIPSCI lines
- New EBiSC Commissioned iPSC lines

**EBiSC iPSC catalogue**
When will EBiSC deliver results?

**Beyond 2016:**
EBiSC will expand its catalogue to meet user demand leading to a self financing operation by 2019.
How will researchers benefit?

EBiSC : a better research landscape in Europe

- Supports best practice for:
  - procurement of primary tissue
  - derivation of iPSC lines
  - testing lines for quality

- Connections to other researchers.

- Provides simple way to distribute iPSCs to other researchers.

- Access to existing lines:
  - Reduced delay & cost
  - More data on actual performance of lines

- Simple contract to access the cells for research

- Access to control lines

- Access point for technology innovation – especially for SME’s

Greater integration of European Research
How will EFPIA partners benefit?

- Access to high quality, research grade cell lines before general distribution
  - Single diversity collection covering a broad spectrum of diseases and therapeutic areas
  - Sustainable supply of cells, with high quality maintained through a standardized QC platform
  - Diversity collection built to align with current commercial aims
  - Existing lines with interesting phenotype prior to peer reviewed publication
  - New lines created via standardized protocols according to EFPIA specification
  - Control lines for building functional/phenotype assays
  - iPS cell culture expertise, resources and optimized methodologies
  - Cells of known provenance, consented for commercial use and with freedom to operate

- Access to expanding data annotating each cell line & new technologies
  - Versatile information management system capable of handling all categories of cell line linked data
  - Controlled access to patient/donor de-identified medical record data
  - User-generated content updated periodically & directly relevant to the specific cell line
  - Development of automated platforms for expansion, cryo-preservation & recovery

- Access to a full service approach
  - Patient/donors and their medical records from a broad network of clinical centers
  - SOPs from tissue procurement to characterized cell lines and beyond into phenotype assays
  - iPS-derived progenitors other somatic lineages if preferred, overcoming need for in-house iPS capabilities
  - Training & skills development if needed for in house iPS capabilties
How will the public benefit?

A common European approach for iPSC based research

Establishing a central resource will

- define and disseminate best practice for iPSC based research to tissue donors, their clinicians, research funders, patients etc as well as to researchers
- provide confidence in current European practice for iPSC based research
- provide a focal point for academics and SME’s for technology innovation
- Enable faster more cost effective research.
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Thank you for your attention!

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More about EBiSC...

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