



Innovative Medicines Initiative

StemBANCC: Shifting Drug Discovery Paradigms

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University of Oxford

The Challenge



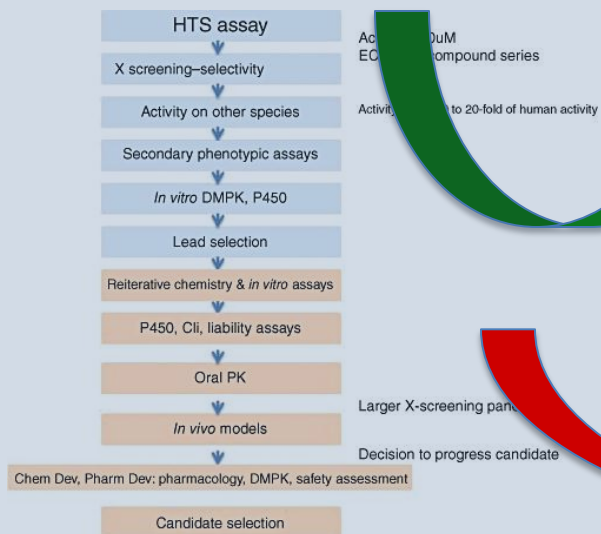
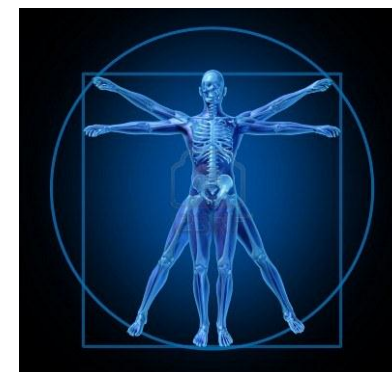
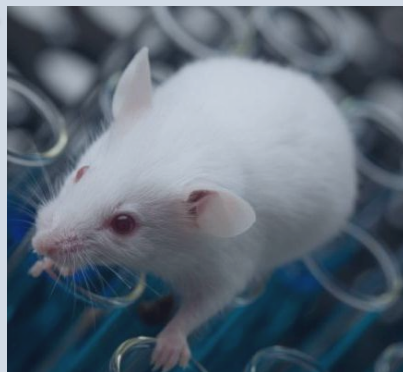
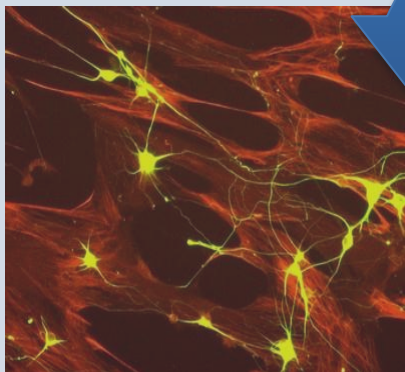
Drug discovery is failing: increasing investment but no increase in new medicines

Alzheimer's Disease: 35.6 million people worldwide in 2010 with global cost of \$605 billion [Alzheimer's Disease International]

Not a single disease modifying treatment for Alzheimer's or any other neurodegenerative disorder



Target

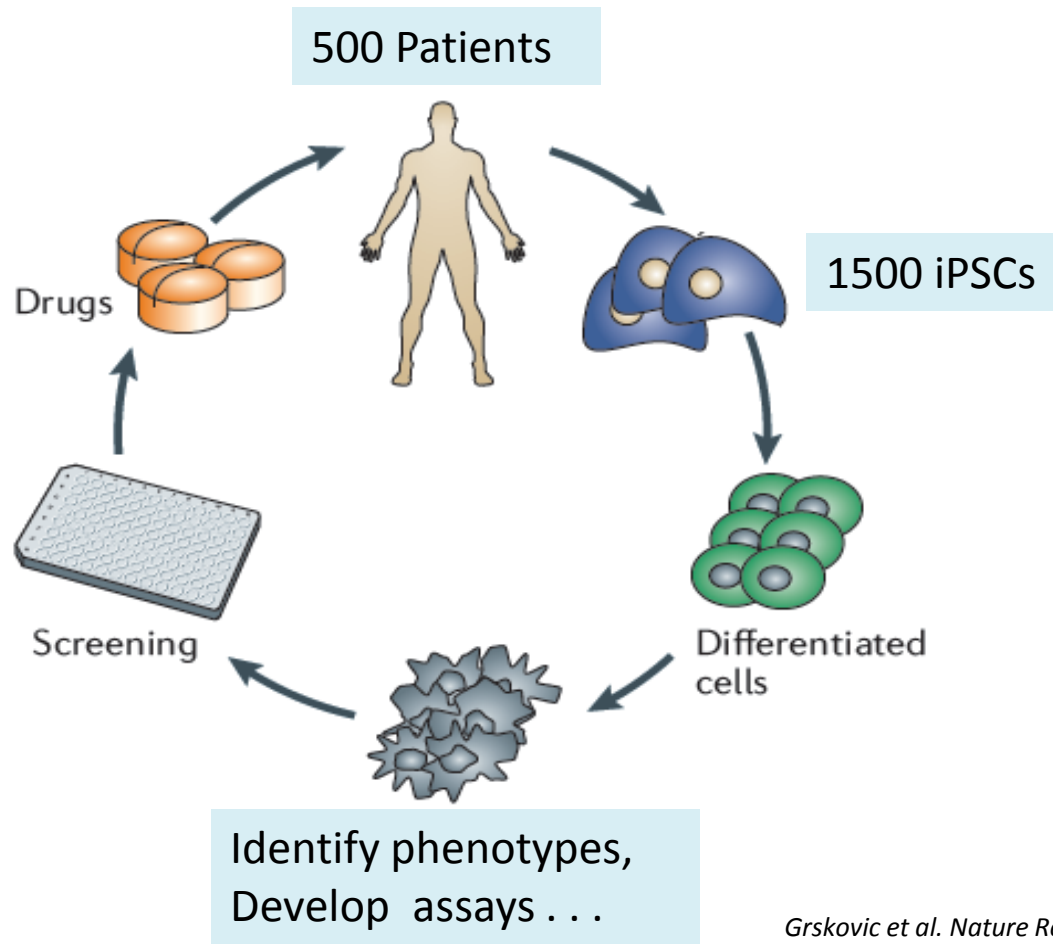


Drug Success

Drug Failure



The StemBANCC Project



- Disease Areas
- Diabetes
 - PNS
 - CNS
- Toxicology

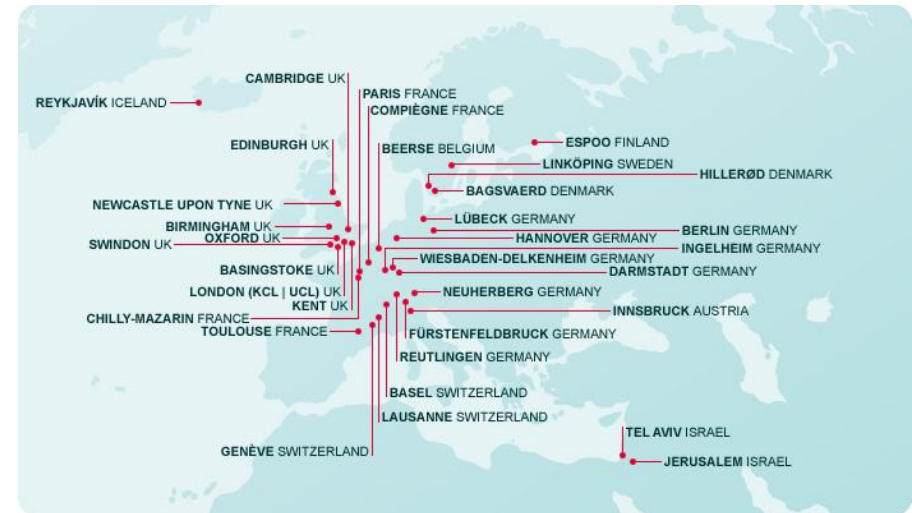
Grskovic et al. Nature Reviews, Dec 2011



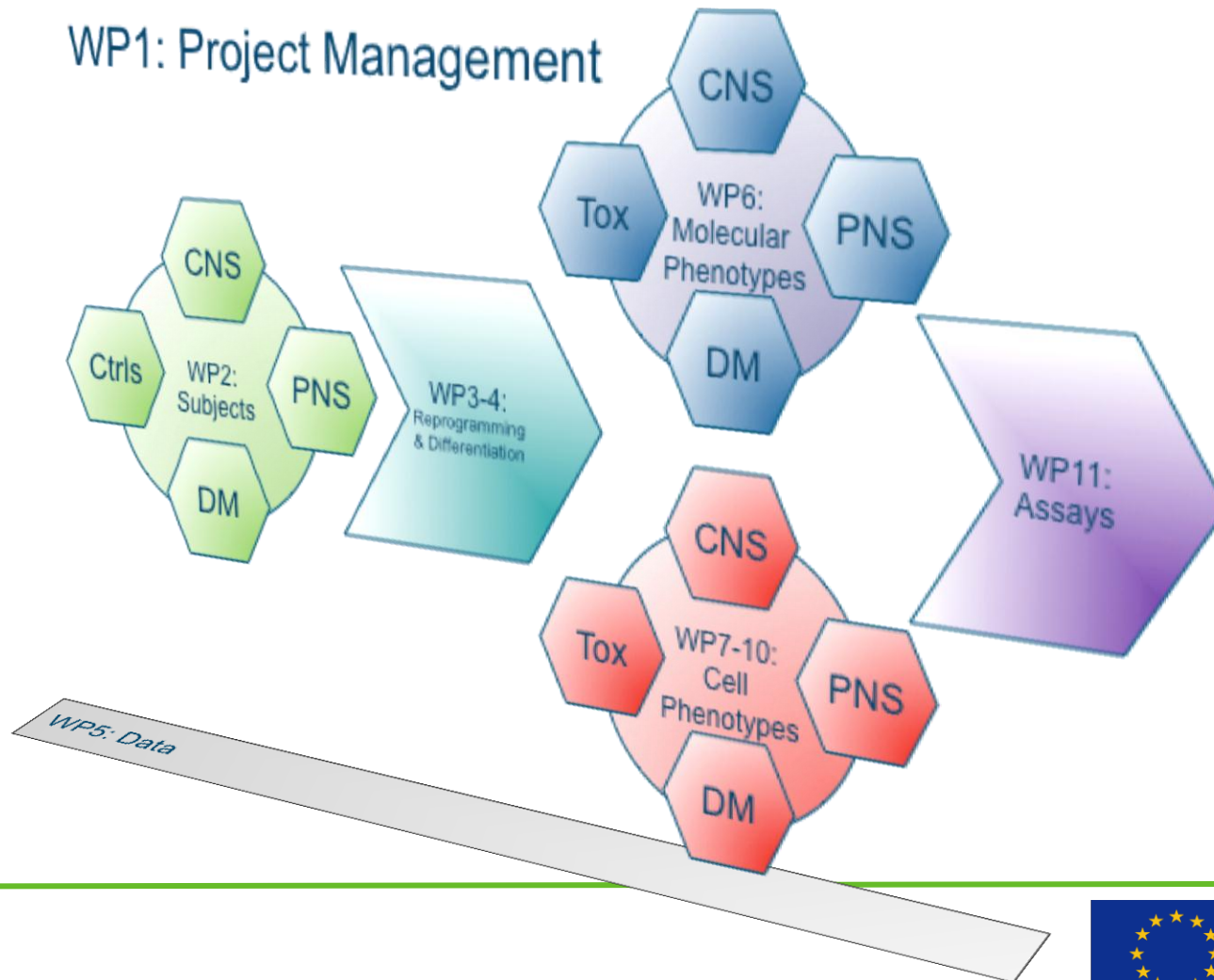
StemBANCC



- Consortium of 10 Pharma and 23 Academic/SME
- Start date: Autumn 2012
- Duration: 5 years
- Total cost: €55.6 million
- Project coordinator: Martin Graf, F. Hoffmann-La Roche Ltd
- Managing entity: Zameel Cader, University of Oxford
- www.stembancc.org



StemBANCC



Achievements

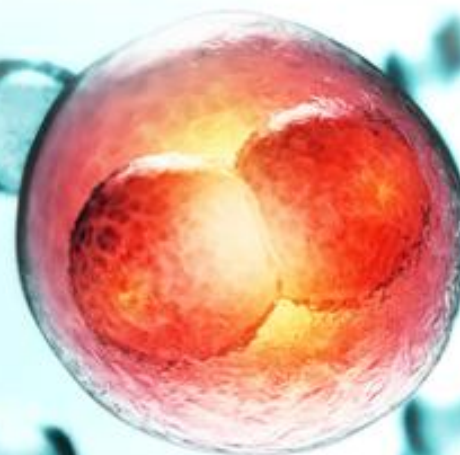


- *Effective project coordination team and steering committee with effective communication across the consortium*
- *Strong public engagement with successful press briefing and worldwide media coverage at launch*
- *A StemBANCC website and intranet for the consortium: central source for information and documents including >28 standard operating protocols etc*



ADVANCING SCIENCE AND IMPLEMENTING NOVEL, CUTTING EDGE TECHNOLOGIES

StemBANCC aims to provide well characterised patient derived induced pluripotent stem cell lines and associated biomaterials in an accessible and sustainable bio-bank. StemBANCC also aims to demonstrate proof of concept for the utility of induced pluripotent stem cells in drug discovery for hard-to-treat disorders.



STEMBANCC - AN OVERVIEW



CONCEPT: StemBANCC is a large-scale, 5 year academic-industry partnership in the area of stem cell research. It brings a consortium of 35 partners together who share their experience and collaborate in 12 work packages. It is a collaborative project between pharmaceutical companies, research institutions and small and medium enterprises (SMEs) to exploit the rich expertise across sectors and enhance knowledge transfer between academia and industry for patient benefit.

[Read more](#)

NEWS & EVENTS

Open position in StemBANCC

Postdoctoral Research Assistant in Stem Cells at University of Oxford, Nuffield Department of Clinical Neurosciences



FACTS & FIGURES

- ▶ Stem cells for biological assays of novel drugs and predictive toxicology
- ▶ Total cost: € 55.6 million



Achievements



- *Reprogramming method and workflow agree with first reference iPSC produced and distributed*
- *Governance framework for iPSC access agreed and iPSC will be accessible to the International community: Academia, SME and Pharma*
- *Multi-centre, multi-national ethics approval granted*
- *Patient recruitment underway (>100 subjects) and accelerating with minimal dataset agreed*



Subject Recruitment



Oxford



Luebeck



London



Copenhagen



Achievements



- *>60 subject reprogrammings in progress/completed: focus on monogenic forms of disease*
- *Technology Transfers / Trainings ongoing in iPSC cultivation and differentiation*
- *Regular WebEx presentations to disseminate knowledge and experience*
- *Development of standardized differentiation protocols validated in multiple labs, e.g.:*
 - *nociceptive neurons*
 - *cortical glutamatergic*
 - *mid-brain dopaminergic neurons*
 - *podocyte differentiation protocol established and patented*

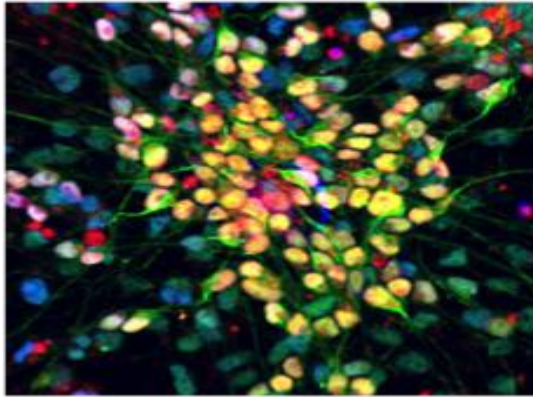


Differentiation at Oxford

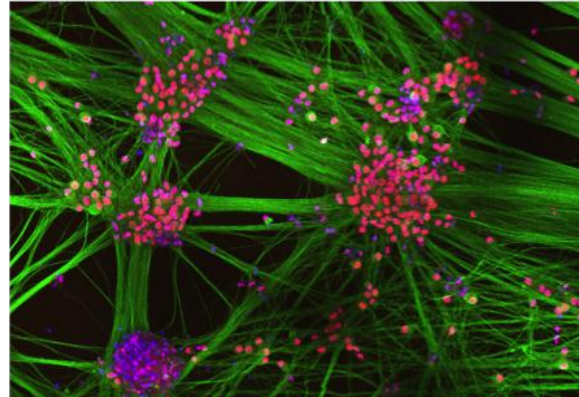


PNS

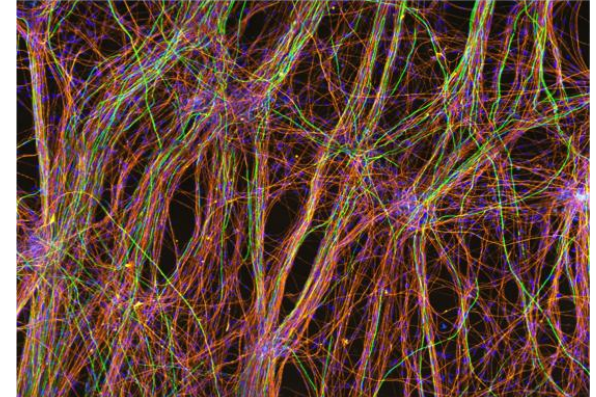
Day 15: Nociceptive Neurons



Day 60: Nociceptive Neurons

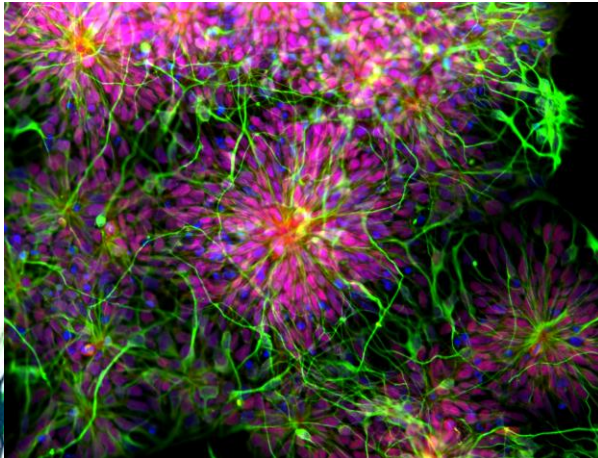


Schwann Cells - Nociceptive Neurons

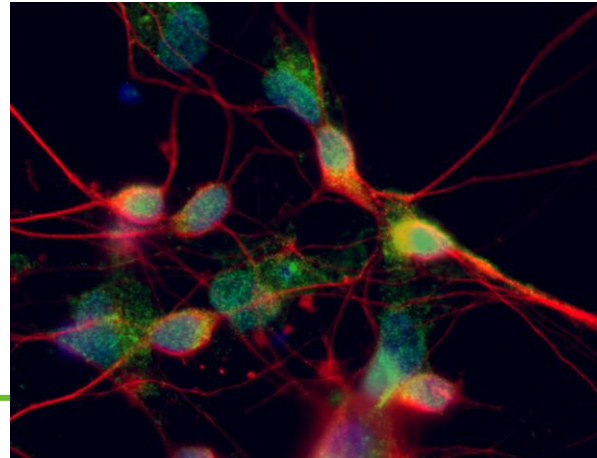


CNS

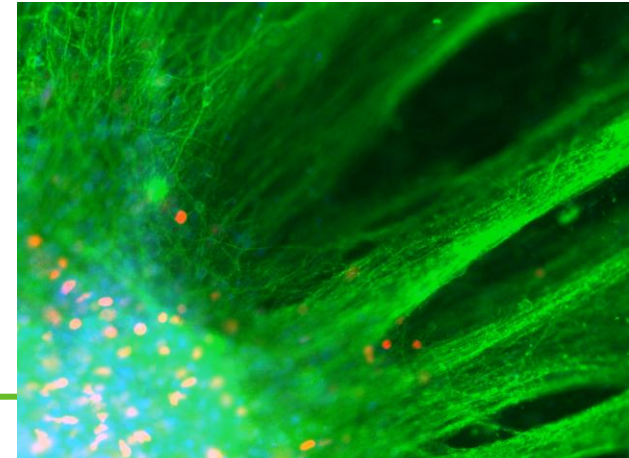
Day 20: Rosettes and neurons



Day 45: Lower cortical layers



Day 80: Upper cortical layers



Thank you



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