



Australian
Stem Cell
Centre

StemCore iPS Cell Workshop

3-21 May 2010

Australian Institute for Bioengineering and
Nanotechnology
University of Queensland
Australia

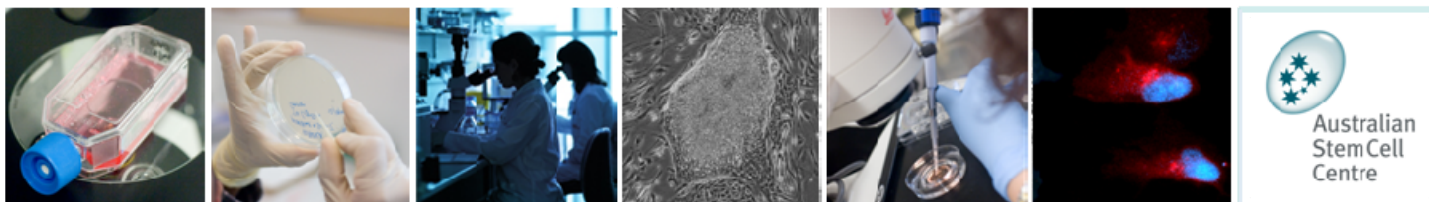
More information and registration details
will be available shortly at
www.stemcellcentre.edu.au

Organiser: Associate Professor Ernst Wolvetang

Supported by:



AIBN Australian Institute for
Bioengineering and Nanotechnology



Workshop Summary

The Stemcore induced pluripotent stem (iPS) cell workshop is aimed at giving participants both practical experience with generation, identification and analysis of iPS cells (optional practical component); and to provide theoretical background of the fast developing field of iPS cell research (lecture component).

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| <p>Phase I (5-8 people)</p> <p>Dates: 3-5 May</p> <p>Location: Hawken Building, Room 50-C401</p> | <p>Practical component I</p> <p>Deriving New iPS Cell Lines</p> <ul style="list-style-type: none"> • Lentivirus production • Viral transduction • iPS generation, chemical modifiers |
| <p>Phase II (20-25 people)</p> <p>Dates: 6-7 & 10-12 May</p> <p>Location: Level 1 Seminar Room, AIBN</p> | <p>Lecture component</p> <p>Understanding the Underlying Biology of Reprogramming</p> <ul style="list-style-type: none"> • The underlying biology of iPS cells • Differentiation of iPS cells • iPS cells as disease models • Ethics regulations and patentability • Epigenetics and reprogramming |
| <p>Phase III (5-8 people)</p> <p>Dates: 13-14 & 17-19 May</p> <p>Location: Hawken Building, Room 50-C401</p> | <p>Practical component II</p> <p>Analysis of Newly Derived iPS Lines</p> <ul style="list-style-type: none"> • Identification, picking and analysis of iPS cells • Markers, RT-PCR, cryopreservations |
| <p>Phase IV</p> <p>Dates: 20-21 May</p> <p>Location: University of Queensland Centre for Clinical Research Building 71 Royal Brisbane & Women's Hospital Campus - Herston, Brisbane</p> | <p>MMRI free conference</p> <p>Mater Medical Research Institute Stem Cell Symposium 2010</p> <ul style="list-style-type: none"> • Epigenetics, transcriptomics and nanobiotechnology of stem cells |

Guest Speakers Include

Associate Professor Ernst Wolvetang

Leader of Australian Stem Cell Centre Reprogramming and Induction of Pluripotency Program and Group leader Stem Cell Engineering Group
Australian Institute for Bioengineering and Nanotechnology, University of Queensland

In 2008 Dr Ernst Wolvetang was appointed Associate Professor in stem cell biology at the Australian Institute for Bioengineering and Nanotechnology in the University of Queensland where he now leads the Stem Cell Engineering Group. Prior to that he was head of the Basic Human Embryonic Stem Cell Biology Laboratory at the Australian Stem Cell Centre (ASCC), as well as Honorary Senior Lecturer in the Department of Anatomy and Cell Biology at Monash University. Before joining the ASCC he was a Post-doctoral Research Fellow in the Centre for Early Human Development in the laboratory of Professor Martin Pera (2003-2006) at the Institute for Reproduction and Development, Monash University. During that period he investigated the role of signalling/gene regulation pathways in the control of growth, differentiation and apoptosis of human embryonic stem cells (hESC) by using lentiviral delivery of shRNA's and cDNAs. This work culminated in his first authored publication in Nature Biotechnology, describing for the first time the relationship between the expression of CD30, apoptosis and genetic instability in hESC. Dr Wolvetang is an editor of several stem cell journals, has submitted three recent patents in the stem cell field and is the director of the Australian Stem Cell Centre Reprogramming and Induction of Pluripotency Program. At present Associate Professor Wolvetang investigates fundamental biological processes of hESC, the development of hESC bioreactors and induced pluripotent cells.

Dr Paul Verma

Principal Research Fellow and Program Leader
Stem Cell Biology, Monash Institute of Medical Research

Paul Verma obtained his PhD at Adelaide University and subsequently joined BresaGen Ltd, Adelaide in 1995, working on transgenesis and nuclear transfer aimed at developing pigs with organs suitable for xeno-transplantation. He later joined the Luminis-BresaGen Cell Therapy Program, where he established a research program aimed at providing alternatives to therapeutic cloning.

In 2001 he moved to the Monash Institute of Medical Research, where he currently heads the stem cell program. His research aims to produce autologous (patient-specific) stem cells, using cell-reprogramming techniques such as somatic cell nuclear transfer and iPS cell technology that are clinically relevant and transplantable. He serves as an International advisor on the Government of India's "Vision group for stem cell research", on the Commonwealth's AISRF Advisory Panel, on the Scientific Advisory Panel, Australian Bone Marrow Registry, on the editorial board of Animal Reproduction Science.

Dr Andrew Laslett

Research Team Leader
CSIRO Molecular and Health Technologies

Andrew and his team joined CSIRO Molecular Health Technologies in August 2009 and they remain based at the ASCC in Clayton. Prior to this he was a Senior Scientist and Group Leader of the Human Embryonic Stem Cell Technology Laboratory at the ASCC. Dr Laslett's research compares human embryonic stem cells to human induced pluripotent stem cells and is focused on exploiting the basic biology of these cell types to create novel tools that enhance pluripotent cell research translation. He leads an independent program as well as having significant national and international collaborations. In September 2007, Dr Laslett was elected as a Board Member and Director of the Australian Society of Medical Research (ASMR). Dr Laslett's research is supported by the Australian Stem Cell Centre, the NHMRC, the Victoria California Stem Cell Alliance (Victorian Government and California Institute for Regenerative Medicine) and the NSW / Victorian Government Stem Cell Research Grant Program.

Dr Megan Munsie

Senior Manager - Research & Government
Australian Stem Cell Centre

Dr Megan Munsie is the Senior Manager – Research and Government at the ASCC where she is responsible for the Centre's government interactions including regulatory and policy issues and the management of the ASCC's diverse research portfolio. She also provides advice and information on ethics and policy in the area of stem cells to ASCC researchers, government and community members. Dr Munsie was a member of the successful collaboration that derived the MEL series of hESC lines in one of the first NHMRC licensed projects in Australia and in 2000 was the first person to demonstrate - in an animal model - that stem cell lines could be generated from an adult cell using the technique of somatic cell nuclear transfer.

Dr Munsie was actively involved in petitioning for reform to the 2002 Australian legislation regulating the use of human embryos in research. She was a member of the International Society for Stem Cell Research Task Force on the Clinical Translation of Stem Cells and was recently invited to join the Victorian Government's Infertility Treatment Authority's Clinical and Scientific Advisory Panel. Previously, Dr Munsie held the position of Scientific Development Manager - Australia for the then UK listed biotechnology company, Stem Cell Sciences. She is also skilled in all aspects of assisted reproductive technology with over twelve years experience as an embryologist in several IVF practices in Australia. Dr Munsie completed her undergraduate degree at the Queensland University of Technology and has received a Masters of Reproductive Sciences and Doctorate of Philosophy from Monash University.

Dr Jun Liu

Research Fellow, Monash Institute of Medical Research

Dr Jun Liu obtained his Ph.D. at the Centre for the Reproductive Medicine, Gent University, Belgium, in 2002. During this period of research, he investigated extensively on the primordial follicles development *in vivo* and *in vitro* by means of cryopreservation ovarian tissue, tissue transplantation, *in vitro* ovarian follicle culture, *in vitro* oocyte maturation, embryo culture and embryonic stem cells derivation technologies. He published research results in the journals of *Biology of Reproduction*, *Human Reproduction* and *Molecular Reproduction and Development*. He moved to Durham University, UK to work on a novel adult stem cell population from hair follicle dermis and to test its functional competency in 2005. From 2007, he joined Dr Paul Verma's lab in Monash Institute of Medical Research, Monash University, working on pluripotent stem cell and somatic cell reprogramming aimed at providing an alternative to therapeutic cloning for stem cell-based therapy.

About StemCore – The Australian Stem Cell Centre Core Facility

StemCore, the Australian Stem Cell Centre's Core Facility, supports stem cell research in Australia via provision of pluripotent stem cell products, services and training. Utilising the expertise and infrastructure of the Australian Stem Cell Centre, StemCore allows research laboratories to increase their efficiencies and outputs through outsourcing commonplace or specialised activities.

The StemCore iPS Service provides scientists with a solution for the custom development of iPS cell lines from their preferred cellular material. Providing researchers with an alternative to the internal development of iPS cell lines, StemCore's iPS Service comprises of two stages: (Stage 1) Generation of new iPS cell lines and (Stage 2) iPS cell line characterisation (Figure One). Uniquely, as customers can opt to be placed within StemCore iPS Facility for the duration of stage one, customers may also receive expert training in iPS generation. Benefits of the StemCore iPS Service include:

- iPS cell lines are developed using scientists preferred cell type(s) with no previous iPS cell experience necessary
- Training can be included as part of the service facilitates future iPS cell development
- Customised list of characterisation options provides you with the level of confidence that you require

For further information on how StemCore can fulfil your iPS cell needs please contact us.

StemCore iPS Cell Service
Associate Professor Ernst Wolvetang
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