The 111th iCeMS SEMINAR

Tue 19 June 2012
16:00-18:30

Venue: 2nd floor Seminar Room (#A207)
iCeMS Main Building, Kyoto University

<Part1- 16:00-16:30>

"Re-Creating the Nervous System in a Dish with Human Pluripotent Stem Cells"

Dr. Mirella Dottori

Senior Research Fellow, Department of Anatomy and Neurosciences
Centre for Neuroscience Research, The University of Melbourne

<Part2- 16:30-17:00>

"Higher-Order Chromossome Structure in Pluripotent Stem Cells"

Dr. Wange Lu

Department of Biochemistry and Molecular Biology
University of Southern California

<Part3- 17:15-17:45>

"Harnessing Pluripotency: Novel Tools for Human Stem Cell Biology"

Dr. Andrew Laslett

Commonwealth Scientific and Industrial Research Organisation (CSIRO)
Materials Science and Engineering, Australia

<Part4- 17:45-18:30>

"Development of Qualified Seed Stocks of Pluripotent Stem Cells for Cell-Based Medicines"

Dr. Glyn Stacey

Head of Division of Cell Biology and Imaging
National Institute for Biological Standards and Control (NIBSC), UK

Contact: iCeMS Prof. Takashi Asada (Research Planning Section) at rp@icems.kyoto-u.ac.jp
Hosted by: iCeMS (Institute for Integrated Cell-Material Sciences), Kyoto University and CiRA (Center for iPS Cell Research and Application), Kyoto University
Co-hosted by: Center for Frontier Medicine, Global COE Program, Kyoto University

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Abstracts for June 19th iCeMS Seminar

Dr. Mirella Dottori

Stem cells can potentially be used to repair the nervous system either by their direct use in transplantation or as cellular models to study endogenous processes involved in regeneration. However, in order for these objectives to be achieved, it is firstly essential to understand how to regulate and direct stem cell differentiation to a defined lineage. The major focus of our research is to study how differentiation of human pluripotent stem cells can be fated to specific neuronal and glial lineages and, more importantly, identifying the progenitor stages in between that distinguish critical pivotal points in cell fate. These studies are the basis for our extended research in neurodegenerative diseases, that include Parkinson's Disease, Friedreich Ataxia and Multiple Sclerosis.

Dr. Wange Lu

The mechanisms of somatic cell reprogramming have been extensively studied. Whereas most studies have focused on epigenetic changes, including DNA methylation and histone modifications, very little is known about the nuclear architecture in pluripotent stem cells. In this seminar I will talk about is higher-order interchromosomal interaction and its relation to pluripotency and reprogramming.

Dr. Andrew Laslett

Dr. Laslett and his laboratory have developed a FACS-based immunotranscriptional profiling system for identifying and isolating human pluripotent stem cells (hPSC). Information gained using this system is being used to (i) produce and characterise novel antibodies to new cell surface markers for pluripotent cells and (ii) to demonstrate critical differences between human iPS cell lines, generated using distinct methodologies both with and without genetic modification, and hESC.

Dr. Glyn Stacey

The delivery of cell lines suitable for use in humans requires a number of carefully controlled steps right from the point of donor selection and tissue storage. The preparation of qualified cell banks of these candidate "clinical grade" lines is a key milestone in this process which provides a source of material for a variety of future clinical applications. This presentation will explore what "clinical grade" means and what is required to deliver such banks of pluripotent stem cell lines with suitable levels of reproducibility and safety.

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