

NIH CRM/SCIG Stem Cell Research Symposium Lister Hill - May 10-11, 2012

May 10, 2012

- 8:00am-8:45am Welcome/Registration
- 8:45am-9:00am Introduction: **Mahendra Rao**
- 9:00am-10:20am Session 1:
Deposit and Distribution of Stem Cell Lines and Differentiated Cells
Moderator - Paul Liu
Brian Bailey – *NHLBI, OTT*
Considerations for sending and receiving stem cells and related materials
Margaret Sutherland - *NINDS, Extramural Program*
Processes and opportunities for distributing cell lines through repositories
Guokai Chen – *NHLBI, iPSC Core*
Control iPSC lines and standardization
Paul Liu – *NHGRI, Oncogenesis and Development Section*
Whole genome sequencing to identify mutations in the iPSC lines
- 10:20am-10:30am BREAK
- 10:30am-11:50pm Session 2:
Differentiation Issues with Stem Cells
Moderator - Manfred Boehm
Pamela Robey – *NIDCR, Craniofacial and Skeletal Diseases Branch*
Mesenchymal stem cells: What are they really, and how can we make them?
T. Jake Liang – *NIDDK, Liver Diseases Branch*
Differentiation of pluripotent stem cells into endoderm-derived tissues
David Bodine – *NHGRI, Hematopoiesis Sections*
The role of DNA methylation in myeloid and red blood cell differentiation
Mahendra Rao – *NIAMS, NIH Center for Regenerative Medicine*
NSC and differentiated cells for screening and therapy
- 11:50pm-1:00pm LUNCH

1:00pm-2:10pm

Session 3:

MSC State of the Field

Moderator - Pamela Robey

Eva Mezey - *NIDCR, Craniofacial and Skeletal Diseases Branch*

Immunoregulatory functions of bone marrow stromal cells

Steven Bauer - *FDA, Center for Biologics Evaluation and Research*

FDA activities and perspectives related to development of MSC-based products

David Stroncek - *CC, Department of Transfusion Medicine*

Bone Marrow Stromal Cell Transplantation Center: BMSC production and analysis

2:10pm-3:20pm

POSTER SESSION

3:20pm-4:30pm

Session 4:

State of the Field - Other Cell Types

Moderator - T. Jake Liang

Chuxia Deng - *NIDDK, Mammalian Genetics Section*

Characterization and elimination of lineage specific memory acquired during differentiation of iPS cells

So Yoon Kim - *NIDDK, Regenerative Biology Section*

Regulation of cell development and mass for diabetes therapy

Manfred Boehm - *NHLBI, Center for Molecular Medicine*

Cardiovascular lineage differentiations: from developmental biology to stem cell technology

4:30pm-5:40pm

Session 5:

HSC State of the Field

Moderator - David Bodine

John Tisdale - *NHLBI, Molecular and Clinical Hematology Branch*

Hematopoietic stem cells as vehicles for therapeutic gene delivery

Nicholas Restifo - *NCI, Surgery Branch*

Bench-to-bedside translation of regenerative medicine using lineage reprogramming of tumor-specific T cells

John Park - *NINDS, Surgical Neurology Branch*

Differentiating iPS cells into microglia

5:40pm-5:50pm

Closing Remarks

May 11, 2012

- 9:00am-10:20am Session 6:
NSC State of the Field
Moderator - Mahendra Rao
Mahendra Rao – *NIAMS, NIH Center for Regenerative Medicine*
Differentiation of dopaminergic neurons and schwann cells from pluripotent stem cells
Daman Kumari - *NIDDK, Gene Expression and Regulation Section*
Development of iPSCs from Fragile X Syndrome patients to study disease mechanisms and evaluate efficacy of potential therapeutic drugs
Avindra Nath - *NINDS, Office of the Clinical Director*
Modeling CNS inflammatory diseases with stem cells
- 10:20am-10:30am BREAK
- 10:30am-12:00pm Session 7:
New Directions in the Field
Moderator - Cynthia Dunbar
Mark P. Mattson - *NIA, Laboratory of Neuroscience*
Mitochondrial control of stem cell fate
Chengyu Liu - *NHLBI, Center for Molecular Medicine*
Manipulating the genome of hiPSCs through gene-targeting methods
Cynthia Dunbar - *NHLBI, Hematology Branch*
Progress towards a rhesus induced pluripotent stem cell preclinical model
Shawn Chen - *NIBIB, Laboratory Molecular Imaging and Nanomedicine*
Genetically transduced mesenchymal stem cells for TBI homing and therapy
- 12:00pm-1:00pm LUNCH
- 1:00pm-2:20pm Session 8:
Moving Towards Translation
Moderator - Mahendra Rao
Kapil Bharti - *NINDS, Mammalian Development Section*
Use of an iPS reporter cell line expressing RPE-specific GFP for improving ips cell to RPE differentiation
Harry Malech - *NIAID, Genetic Immunotherapy Section*
Gene-corrected oxidase positive neutrophils generated from chronic granulomatous disease patient iPS cells for treatment of severe fungal infection not responding to conventional therapy: Discussion of the science, safety issues, logistics of scale-up, costs and regulatory issues.
Russell Lonser - *NINDS, Surgical Neurology Branch*
Direct pharmacologic strategies for regenerative therapy in Parkinson's disease.
- 2:20pm-2:30pm Closing Remarks