

The 33rd Hot Spring Harbor International Symposium
– Cutting-Edge Research and Technology in Stem Cells and Reprogramming –

October 29 -30, 2024

2F Collaborative Research Station-I, Hospital Campus, Kyushu University, Fukuoka, Japan

Tuesday, October 29, 2024

10:00-10:05 Opening Remarks: **Yasuyuki Ohkawa** (Director of Medical Institute of Bioregulation)

Session 1: Stem cell regulation and medicine Chair: **Yoshihiro Baba**

10:05-10:40 **Cantas Alev** (Kyoto University, Japan)

Reconstituting human axial development *in vitro*

10:40-11:05 **Satoshi Yamazaki** (The University of Tokyo, Japan)

Expansion and Prediction of hematopoietic stem cells

11:05-11:30 **Shin Kaneko** (Kyoto University, Japan)

The Generation of T cells from iPS cells for Immunotherapy

11:30-12:45 **Lunch (meeting invited speakers only)**

Session 2: Tissue regeneration and reprogramming Chair: **Takahiro Masuda**

12:45-13:20 **Lijian Hui** (Center for Excellence in Molecular Cell Science, CAS, China)

Cell Identity Conversion: Liver Regeneration and Cell Therapy

13:20-13:45 **Kinichi Nakashima** (Kyushu University, Japan)

Artificial induction of neurogenesis to restore the function of the central nervous system

13:45-14:10 **Atsushi Suzuki** (Kyushu University, Japan)

Direct reprogramming technology and its medical prospects

14:10-14:20 **Group Photos**

14:20-14:45 **Coffee break**

Session 3: Short Talks from MIB (1) Chair: **Hiroki Shibata & Yoshihiro Izumi**

14:45-15:55 Short talks of 10 minutes each by 7 speakers (see the next page for details)

15:55-16:25 **Coffee break**

Session 4: Biotechnology and imaging Chair: **Hiroshi Ochiai**

16:25-17:00 **Samantha A. Morris** (Harvard Medical School, USA)

New genomic technologies to deconstruct and control cell identity

17:00-17:25 **Yasuyuki Ohkawa** (Kyushu University, Japan)

Single-cell epigenome lineage tracing via RNA Pol II-defined cell states

17:25-17:50 **Masaru Ishii** (Osaka University, Japan)

Spatiotemporal heterogeneity of *in vivo* immune systems

19:00- **Dinner party (by invitation only)**

Wednesday, October 30, 2024

Session 5: Stem cell growth and differentiation Chair: **Akiyoshi Uezumi**

- 09:30-10:05 **Hongkui Deng** (Peking University, China)
From Bench to Bedside: Chemical reprogramming and the future of regenerative medicine
- 10:05-10:40 **Kim B. Jensen** (University of Copenhagen, Denmark)
Guiding intestinal stem cell fate
- 10:40-11:05 **Mitsuru Morimoto** (RIKEN, Japan)
Identifying lung stem cell subpopulation by combining single-stem cell morphometrics, organoid culture and transcriptome
- 11:05-11:30 **Aiko Sada** (Kyushu University, Japan)
Unraveling stem cell dynamics in skin regeneration and aging
- 11:30-12:45 **Lunch (meeting invited speakers only)**

Session 6: Short Talks from MIB (2) Chair: **Takehito Uruno & Satoshi Watanabe**

- 12:45-13:55 Short talks of 10 minutes each by 7 speakers (see the next page for details)
- 13:55-14:20 **Coffee break**

Session 7: Organoid technology and disease Chair: **Shinichiro Sawa**

- 14:20-14:55 **Meritxell Huch** (Max Planck Institute, Germany)
Building Architecture and Complexity in Tissue-Derived Liver Organoids
- 14:55-15:20 **Ryuichi Nishinakamura** (Kumamoto University, Japan)
Building a kidney from pluripotent stem cells
- 15:20-15:45 **Mototsugu Eiraku** (Kyoto University, Japan)
Organogenesis in stem cell culture
- 15:45-16:10 **Toshiro Sato** (Keio University, Japan)
Understanding of Human Organ Function and Disease Using Organoid Technology
- 16:10-16:15 Closing Remarks: **Atsushi Suzuki** (Kyushu University, Japan)
-

Session3: Short Talks from MIB (1)Chair: **Hiroki Shibata & Yoshihiro Izumi**14:45-15:55, Tuesday, October, 29 2024

S-01: Chihiro Nakayama (Division of Cancer Genome Regulation)

Transcription termination and its function in cancer

S-02: Yutaro Yada (Division of Immunology and Genome Biology)

STIM-mediated store-operated calcium entry regulates positive selection and affinity maturation of germinal center B cells

S-03: Shinichiro Sawa (Division of Mucosal Immunology)

Early primary ossification center is a reservoir for cells that promote fetal bone marrow development

S-04: Ayame Nagafuchi (Division of Allergy and Immunology)

Identification of autoantibodies promoting remyelination in aging

S-05: Shota Yamamoto (Division of Molecular Neuroimmunology)

Macrophage/microglia-producing transient increase of platelet-activating factor is required for neuropathic pain

S-06: Akiyoshi Uezumi (Division of Cell Heterogeneity)

Retinoic acid signaling regulates fate of mesenchymal stromal cells in skeletal muscle

S-07: Satoshi Watanabe (Division of Trans-Scale Structural Life Science)Flexible motion and zinc-mediated regulation of a cargo receptor ERGIC-53 revealed by cryo-EM

Session6: Short Talks from MIB (2)Chair: **Takehito Uruno & Satoshi Watanabe**12:45-13:55, Wednesday, October, 30 2024

S-08: Yuki Ito (Division of Molecular Systems for Brain Function)

Decoding neuronal circuit-specific synapse proteomes using proximity labeling

S-09: Hiroshi Ochiai (Division of Gene Expression Dynamics)

Changes in higher-order genomic structures coupled with transcriptional states in mouse embryonic stem cells

S-10: Keisuke Matsubara (Division of Immunogenetics)

Novel functions of DOCK2 in RNA metabolism

S-11: Taichi Matsubara (Division of Biomedical Information Analysis)

Locating transcription factor binding sites with Quantum Convolutional Neural Networks

S-12: Zhuo Qu (Division of Bioinformatics)

Genome-wide identification of exon extension/shrinkage events induced by splice-site-creating mutations

S-13: Kohta Nakatani (Division of Metabolomics)

Wide-scope targeted analysis of bioactive lipids based on chromatography mass spectrometry

S-14: So Morishita (Division of Integrated Omics)The different responses of the Akt downstream molecules against obesity-induced attenuation of insulin signal transmission in mice liver
