

The 4th Symposium of the Inter-University Research Network
for Trans-Omics Medicine

Trans-Omics for Advanced Medical Sciences

November 14 (Thu) 13:00 – 15 (Fri) 16:00, 2019

Fujii Memorial Hall, Fujii Memorial Institute of Medical Sciences,
Institute of Advanced Medical Sciences, Tokushima University

Invited Speakers

Alessandro Ori
(Leibniz Institute on
Aging)

Siew-Kee Low
(Japanese Foundation for
Cancer Research)

Hiroki Ueda
(University of Tokyo
/RIKEN)

Yasushi Okada
(University of Tokyo
/RIKEN)

Yoshihiro Shimizu
(RIKEN)

Hiroshi Tsugawa
(RIKEN)

Osamu Nureki
(University of Tokyo)

Kenji Mizuguchi
(NIBIOHN/
Osaka University)

Katsuyuki Yugi
(RIKEN)

Yasuyuki Ohkawa
(Kyushu University)

Seiji Okada
(Kyushu University)

Hitoshi Niwa
(Kumamoto University)

Kei-ichiro Ishiguro
(Kumamoto University)

Tetsushi Furukawa
(Tokyo Medical and
Dental University)

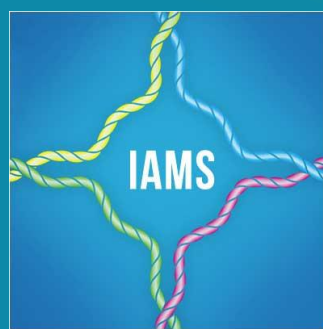
Yuta Kochi
(Tokyo Medical and
Dental University)

Taku Okazaki
(University of Tokyo
/ Tokushima University)

Seiichi Oyadomari
(Tokushima University)

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主催: 徳島大学先端酵素学研究所
共催: トランスオミクス医学研究拠点
ネットワーク形成事業
共同利用・共同研究拠点事業



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Institute of Advanced Medical Sciences, Tokushima University

Thursday, November 14, 2019

13:00-13:05 Opening Remarks:
Takuya Sasaki (Executive Director, Tokushima University)

Session 1: Epigenetics

Chair: Tatsuya Takemoto (Institute of Advanced Medical Sciences, Tokushima University)

13:05-13:30 **Yasuyuki Ohkawa** (Medical Institute of Bioregulation, Kyushu University)
Spatial epigenomics approached by chromatin integration labeling technology

13:30-13:45 **Mitsuhiro Endoh** (Institute of Molecular Embryology and Genetics,
Kumamoto University)
Role of PCGF6-PRC1 Polycomb in regulation of germ cell-related genes in mouse ES cells

13:45-14:10 **Yasushi Okada** (Graduate School of Science, University of Tokyo/RIKEN BDR)
Toward imaging-based epigenome analysis in living cells

14:10-14:25 Coffee break

Special Lecture

Chair: Hidetaka Kosako (Institute of Advanced Medical Sciences, Tokushima University)

14:25-15:05 **Alessandro Ori** (Leibniz Institute on Aging)
The aging brain proteome

Session 2: Advanced Technologies

Chair: Yusuke Kato (Institute of Advanced Medical Sciences, Tokushima University)

15:15-15:40 **Yoshihiro Shimizu** (RIKEN BDR)

A unique mass spectrometric methods for high-sensitive detection and quantification of metabolites and proteins

15:40-15:55 **Izumi Ohigashi** (Institute of Advanced Medical Sciences, Tokushima University)

Proteomic profiling of thymic epithelial cells

15:55-16:20 **Osamu Nureki** (Graduate School of Science, University of Tokyo)

Molecular mechanism of CRISPR-Cas9 and structure-based development of genome-editing tools

16:20-16:35 Coffee break

Session 3: Trans-Omics and Systems Biology

*Chair: Taku Okazaki (Institute for Quantitative Biosciences, University of Tokyo/
Institute of Advanced Medical Sciences, Tokushima University)*

16:35-17:00 **Katsuyuki Yugi** (RIKEN IMS)

Trans-omics: integration of multiple omic data on the basis of reaction kinetics

17:00-17:25 **Yuta Kochi** (Medical Research Institute, Tokyo Medical and Dental University)

What can we learn from eQTL studies in disease genetics?

17:25-17:40 **Yikelamu Alifu** (Medical Research Institute, Tokyo Medical and Dental University)

The clock components *Period2*, *Cryptochrome1a*, and *Cryptochrome2a* function in establishing light-dependent behavioral rhythms and/or total activity levels in zebrafish

17:40-18:05 **Hiroki Ueda** (Graduate School of Medicine, University of Tokyo/RIKEN BDR)

Systems Biology of Mammalian Sleep/Wake Cycles

~Phosphorylation Hypothesis of Sleep~

18:30-20:30 Mixer (Sora)

Session 4: Disease

Chair: Munehide Matsuhisa (Institute of Advanced Medical Sciences, Tokushima University)

- 9:10-9:35 **Seiichi Oyadomari** (Institute of Advanced Medical Sciences, Tokushima University)
Novel role of endoplasmic reticulum (ER) stress transducer PERK in inflammation regulation
- 9:35-9:50 **Yuichi Takashi** (Fukuoka University Chikushi Hospital)
FGFR1 is the phosphate sensing receptor regulating blood FGF23 level
- 9:50-10:15 **Tetsushi Furukawa** (Medical Research Institute, Tokyo Medical and Dental University)
Trans-omics approach for precision medicine of atrial fibrillation
- 10:15-10:30 Coffee break

Session 5: Cell Biology and Stem Cells

Chair: Seiichi Oyadomari (Institute of Advanced Medical Sciences, Tokushima University)

- 10:30-10:55 **Hitoshi Niwa** (Institute of Molecular Embryology and Genetics, Kumamoto University)
Functional analysis of Myst family histone acetyltransferase complex in mouse ES cells
- 10:55-11:10 **Jiyoung Lee** (Medical Research Institute, Tokyo Medical and Dental University)
Generation of structural and functional heart organoids from mouse embryonic stem cells
- 11:10-11:35 **Seiji Okada** (Medical Institute of Bioregulation, Kyushu University)
Spinal Cord Regeneration and Astrogliosis
- 11:35-12:00 **Kei-ichiro Ishiguro** (Institute of Molecular Embryology and Genetics, Kumamoto University)
MEIOSIN directs germ cell fate decision from mitosis to meiosis
- 12:00-13:30 Lunch / 5th Committee Meeting of Inter-University Research Network for Trans-Omics Medicine (members only)

Session 6: Cancer and Immune System

Chair: Toyomasa Katagiri (Institute of Advanced Medical Sciences, Tokushima University)

- 13:30-13:55 **Siew-Kee Low** (Japanese Foundation for Cancer Research)
Next generation sequencing of circulating tumor DNA in clinical cancer research
- 13:55-14:10 **Tetsuya Sakurai** (Medical Institute of Bioregulation, Kyushu University)
Identification of bioactive lipid that contributes to tissue specific immune evasion
- 14:10-14:35 **Taku Okazaki** (Institute for Quantitative Biosciences, University of Tokyo/
Institute of Advanced Medical Sciences, Tokushima University)
Regulation of autoimmunity and anti-cancer immunity by inhibitory co-receptors
- 14:35-14:50 Coffee break

Session 7: Metabolomics and Informatics

Chair: Takenori Yamamoto (Institute of Advanced Medical Sciences, Tokushima University)

- 14:50-15:15 **Hiroshi Tsugawa** (RIKEN CSRS/IMS)
Computational metabolomics to deepen the understanding of metabolisms
- 15:15-15:30 **Yoshihiro Izumi** (Medical Institute of Bioregulation, Kyushu University)
Next-generation metabolomics: technological development and medical application
- 15:30-15:55 **Kenji Mizuguchi** (NIBIOHN/Institute for Protein Research, Osaka University)
Artificial intelligence-based drug discovery: challenges and applications to target identification and pharmacokinetic modelling
- 15:55-16:00 Closing Remarks:
Hidetaka Kosako (Institute of Advanced Medical Sciences, Tokushima University)