

The 19th International Symposium of the Institute Network

for Biomedical Sciences in Sendai

第 19 回 生命医科学研究所ネットワーク国際シンポジウム

L: Long talk 18 min (15 min + 3 min)

S: Short talk 12 min (9 min + 3 min)

Keynote lecture: 40 min (30 min + 10 min)

October 10th (Thu)

13:00 – 13:15 **Opening Remarks**

Koji Yanagisawa (Director, University Research Facilitation Division, MEXT (Video message))

Asako Sugimoto (Executive Vice President for Research, Tohoku Univ.)

Kozo Tanaka (Director of IDAC, Tohoku Univ.)

13:20 – 14:50 **Session 1**

Chairperson Koetsu Ogasawara (IDAC, Tohoku Univ.)

13:20 – 13:38 **L-1**

The characteristics of in vivo senescent somatic cells in aging and cancer

Teh-Wei Wang (IMS, UTokyo)

13:39 – 13:57 **L-2**

New insights into the extracellular mechanisms of stem cell impairment in aging skin

Aiko Sada (MIB, Kyushu Univ.)

13:58 – 14:16 **L-3**

Crosstalk between immune cells and mesenchymal stem cells for musculoskeletal tissue regeneration

Kazuo Okamoto (Cancer Research Institute, Kanazawa Univ.)

14:17 – 14:35 **L-4**

Unveiling bivalent chromatin in senescent cells and their implications

Naoko Hattori (IMCR, Gunma Univ.)

- 14:36 – 14:48 **S-5**
Caspase-12 is an innate immune sensor for bacteria-associated molecular patterns
Kohsuke Tsuchiya (Cancer Research Institute, Kanazawa Univ.)
- 14:50 – 15:05 **Coffee break**
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- 15:05 – 15:45 **Keynote lecture 1**
Chairperson Akiko Satoh (IDAC, Tohoku Univ.)

Circadian Clocks and Their Impact on Metabolism, Aging and Longevity
Prof. Joseph S. Takahashi
Department of Neuroscience, Peter O'Donnell Jr. Brain Institute,
University of Texas Southwestern Medical Center, USA
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- 15:45 – 16:00 **Coffee break**
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- 16:00 – 16:40 **Keynote lecture 2**
Chairperson Shinpei Kawaoka (IDAC, Tohoku Univ.)

The Wnt-Sterol-MAPK connection
Prof. David M. Virshup
Program in Cancer and Stem Cell Biology, Duke-NUS Medical School, Singapore
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- 16:40 – 16:50 **Coffee break**
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- 16:50 – 18:15 **Session 2**
Chairperson Fan-Yan Wei (IDAC, Tohoku Univ.)
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- 16:50 – 17:08 **L-6**
Functions of cell adhesion molecules in the nervous system
Kiyohito Mizutani (Institute of Advanced Medical Sciences, Tokushima Univ.)
- 17:09 – 17:21 **S-7**
Designer niche cells to engineer tissue environment
Satoshi Toda (IPR, Osaka Univ.)

- 17:22 – 17:34 **S-8**
Epigenetically regulated dopamine neurons in the paraventricular hypothalamus enhance the food consumption
Daisuke Kohno (IMCR, Gunma Univ.)
- 17:35 – 17:47 **S-9**
Blood flow-dependent force parameters instruct endocardial cell identity for the cardiac lumen morphogenesis
Hajime Fukui (Institute of Advanced Medical Sciences, Tokushima Univ.)
- 17:48 – 18:00 **S-10**
Metabolic regulation of modified RNA in physiology and pathology
Akiko Ogawa (IDAC, Tohoku Univ.)
- 18:01 – 18:13 **S-11**
Conversion of hepatocytes into intestinal epithelial cells
Shizuka Miura (MIB, Kyushu Univ.)
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18:25 – 20:30 **Reception**

October 11th (Fri)

9:00 – 10:05 **Session 3**
Chairperson Yasuhisa Matsui (IDAC, Tohoku Univ.)

9:00 – 9:18 **L-12**
Immune regulation in the era of pluripotent stem cells
Ken-ichiro Seino (IGM, Hokkaido Univ.)

9:19 – 9:37 **L-13**
Extrinsic mechanisms involved in brain development and evolution
Kenji Shimamura (IMEG, Kumamoto Univ.)

9:38 – 9:50	S-14 Sex-dependent regulation of vertebrate somatic growth and aging by germ cells Kota Abe (RIMD, Osaka Univ.)
9:51 – 10:03	S-15 Generation of the organotypic kidney structure solely from pluripotent stem cells Shunsuke Tanigawa (IMEG, Kumamoto Univ.)
10:05 – 10:15	Coffee break
10:15 – 10:55	Keynote lecture 3 Chairperson Kozo Tanaka (IDAC, Tohoku Univ.) Genoprotective interventions for healthspan extension Prof. Elsa Logarinho Ageing and Aneuploidy Lab, University of Porto, Portugal
10:55 – 11:05	Coffee break
11:05 – 12:10	Session 4 Chairperson Tomoyuki Yambe (IDAC, Tohoku Univ.)
11:05 – 11:23	L-16 Molecular mechanisms of mitophagy underlying Parkinson's disease pathogenesis Noriyuki Matsuda (MRI, Tokyo Medical and Dental Univ.)
11:24 – 11:42	L-17 Ageing Exacerbates Murine Lung Ischemia-Reperfusion Injury by Excessive Inflammation and Impaired Tissue Repair Response Yoshinori Okada (IDAC, Tohoku Univ.)
11:43 – 11:55	S-18 Activated branched-chain amino acid metabolism regulates the aggressive nature in human triple negative breast cancer Kenkyo Matsuura (Institute for Life and Medical Sciences, Kyoto Univ.)

11:56 – 12:08 **S-19**
Sustaining microglial reparative function enhances stroke recovery
Jun Tsuyama (MRI, Tokyo Medical and Dental Univ.)

12:10 – 12:15 **Photo session**

12:15 – 13:15 **Lunch / Organizing Committee**

13:15 – 14:30 **Poster Session**

P-01

Establishment of COVID-19 AI-Nanopore platform

Shoho Lee (IGM, Hokkaido Univ.)

P-02

Functional analysis of droplet-like structures regulating mammalian autophagy

Yuta Ogasawara (IGM, Hokkaido Univ.)

P-03

Degradation pathway-dependent regulatory mechanisms of the innate immune molecule STING in cancer cells

Eisuke Yumoto (IDAC, Tohoku Univ.)

P-04

CENP-E orientation in fibrous corona defined by expansion microscopy

Hirofuka Fukue (IDAC, Tohoku Univ.)

P-05

PP1A promotes the OLA1 polyubiquitination by Aurora A for centrosome maturation

Xingming Li (IDAC, Tohoku Univ.)

P-06

A resting-state functional magnetic resonance imaging (rs-fMRI) study to investigate functional connectivity networks in aged and dietary restricted mice

Takuya Urushihata (IDAC, Tohoku Univ.)

P-07

Investigation of Non-Physiological Shear Stress (NPSS)-Induced Von Willebrand Factor Degradation (vWF) in Blood-Contacting Devices

Chikweto Francis (IDAC, Tohoku Univ.)

P-08

Exploring the landscape of tRNA modifications in ageing

Longteng Zhang (IDAC, Tohoku Univ.)

P-09

A amino acid-responsive gut hormone regulates behavioural and metabolic optimization in Drosophila

Yuto Yoshinari (IMCR, Gunma Univ.)

P-10

Iron-dependent epigenetic regulations of adipocyte differentiation via JMJD1A and TET2

Tomohiro Suzuki (IMCR, Gunma Univ.)

P-11

The stem cell niche governs the phenotypic antagonism between hair graying and melanoma

Yasuaki Mohri (IMS, UTokyo)

P-12

Lysosomal activity fluctuation in adult neural stem cells

He Zhang (IMS, UTokyo)

P-13

Exploring regulatory factors of bone marrow niche remodeling in hematological malignancies using single cell multi-omics analysis

Yasutaka Hayashi (MRI, Tokyo Medical and Dental Univ.)

P-14

A mitochondrial one-carbon metabolism promotes breast cancer tumorigenesis and lung metastasis

Tsunaki Hongu (Cancer Research Institute, Kanazawa Univ.)

P-15

Screening of osimertinib-responsive epigenetic factors in EGFR mutant lung cancer cells

Akihiko Ishimura (Cancer Research Institute, Kanazawa Univ.)

P-16

Tools for analyzing cancer cell interactions with their surrounding microenvironments

Misa Minegishi (Institute for Life and Medical Sciences, Kyoto Univ.)

P-17

Notch2 with retinoic acid regulate the development of GALT-specific IL-23-producing cDCs that mediate mucosal host defense against infectious pathogens

Daiya Ohara (Institute for Life and Medical Sciences, Kyoto Univ.)

P-18

The sequence element preserving chromatin condensation to repress sexual development of Plasmodium falciparum

Mai Nakashima (RIMD, Osaka Univ.)

P-19

Sex-dependent regulation of vertebrate somatic growth and aging by germ cells

Kota Abe (RIMD, Osaka Univ.)

P-20

Elucidation of thermal signaling in neuronal differentiation using intracellular thermometry

Shunsuke Chuma (IPR, Osaka Univ.)

P-21

Influence of hydrogen bonding on P-glycoprotein efflux transport as elucidated by evaluation of a de-novo prediction model

Yulong Gou (IPR, Osaka Univ.)

P-22

Visualizing translational regulation at single-cell and single-mRNA resolution

Aoi Satoh (Institute of Advanced Medical Sciences, Tokushima Univ.)

P-23

High-Resolution Visualization of Oligomeric State Distributions and Conformational Changes in Dynamic Protein Assemblies

Motonori Matsusaki (Institute of Advanced Medical Sciences, Tokushima Univ.)

P-24

Essential role of chronic BCR signaling in the generation and maintenance of age-associated B cells from anergic B cells

Keisuke Imabayashi (MIB, Kyushu Univ.)

P-25

Exploring the role of $\gamma\delta$ T cells in the pathogenesis of Autism Spectrum Disorder

Natsumi Awata (MIB, Kyushu Univ.)

P-26

Dll4–Notch2 axis regulates skeletal muscle plasticity

Shin Fujimaki (IMEG, Kumamoto Univ.)

P-27

Epigenetic regulation of profibrotic macrophage skewing by a lysine-specific demethylase KDM7A

Tomoaki Koga (IMEG, Kumamoto Univ.)

14:30 – 15:55

Session 5

Chairperson Yasuyuki Taki (IDAC, Tohoku Univ.)

14:30 – 14:42

S-20

A quality control system for monitoring protein complex integrity

Takuya Tomita (IMS, UTokyo)

14:43 – 14:55

S-21

Development of a mouse model of hepatitis C virus-surrogate infection using a closely related virus.

Tomohisa Tanaka (IGM, Hokkaido Univ.)

- 14:56 – 15:14 **L-22**
Generation of Artificial Lipid Probes by Protein Engineering
Taki Nishimura (IPR, Osaka Univ.)
- 15:15 – 15:33 **L-23**
***Bartonella* spp. induce angiogenesis via activation of VEGF receptor signaling**
Kentaro Tsukamoto (RIMD, Osaka Univ.)
- 15:34 – 15:52 **L-24**
Structural basis for alterations in ACE2-receptor recognitions and neutralizing antibody evasion by SARS-CoV-2 variants
Takao Hashiguchi (Institute for Life and Medical Sciences, Kyoto Univ.)
- 15:55 – 16:00 **Coffee break**
- 16:00 – 16:15 **Awards Ceremony & Closing Remark**
Kozo Tanaka (Director of IDAC, Tohoku Univ.)
Fan-Yan Wei (Deputy Director of IDAC, Tohoku Univ.)

One presentation from the short talks will be selected for the Best Oral Presentation Award. The selection will be made by the Director of the IDAC and the organizing committee of this symposium. Three presentations from the poster sessions will be selected for the Poster Award. The selection will be based on the votes of the oral presenters.