

The 14th International Symposium of the Institute Network for Biomedical Sciences

Frontier in Medical Science and Microbial Diseases

Research Institute for Microbial Diseases, Osaka University

October 2 - 3, 2019

Hankyu Corporation-Sanwa Bank Hall, Ichō-Kaikan, Osaka University, Osaka, Japan

Wednesday, October 2, 2019

09:20 - Registration

10:00 - 10:05 Opening Remarks
Yoshiharu Matsuura (Director of Research Institute for Microbial Diseases, Osaka University)

Session 1: Advanced Technologies in Medical Science

Chairs: Daron M. Standley (Research Institute for Microbial Diseases/ Immunology Frontier Research Center, Osaka University)

Kenji Mizuguchi (Institute for Protein Research, Osaka University)

10:05-10:30 S-01: **Ken J. Ishii** (The Institute of Medical Science, The University of Tokyo)
Application of Machine Learning to Vaccine Adjuvants: Deep Learning versus Classic Immunology

10:30-10:55 S-02: **Yasuyuki Taki** (Institute of Development, Aging and Cancer, Tohoku University)
Brain development and aging using large brain MRI database

10:55-11:20 S-03: **Kenji Mizuguchi** (Institute for Protein Research, Osaka University)
Data integration as a basis for artificial intelligence in drug discovery

11:20-11:35 **Coffee Break**

11:35-11:50 Y-01(P-01): **Daisuke Kamimura** (Institute for Genetic Medicine, Hokkaido University)
Characterization of the Gateway Reflex in space by the world's first disease model experiment in ISS

11:50-12:05 Y-02(P-05): **Yoh Matsuki** (Institute for Protein Research, Osaka University)
Hybrid Structural Analysis of β 2-Microglobulin Amyloid Fibril from Amyloidosis Patient using Solid-State NMR and Cryo-EM

12:05-12:20 **Group Photo** at 1F Entrance Hall

12:20-13:50 **Luncheon Poster Session** at 3F Main conference room
(Complimentary light meal and soft drinks)

Keynote Lecture

Chair: Sho Yamasaki (Research Institute for Microbial Diseases/ Immunology Frontier Research Center, Osaka University)

13:50-14:30 **Andre Veillette** (University of Montréal and McGill University, Canada)
Innate immune cells in normal and anti-tumor immunity

14:30-14:50 **Coffee Break**

Session 2: Novel in vivo approaches in Medical Science

Chairs: Masahito Ikawa (Research Institute for Microbial Diseases, Osaka University)

Junji Takeda (Research Institute for Microbial Diseases, Osaka University)

14:50-15:15 S-04: **Kosuke Yusa** (Institute for Frontier Life and Medical Sciences, Kyoto University)
Development and application of genome-wide CRISPR-KO screening

15:15-15:40 S-05: **Masahiro Sonoshita** (Institute for Genetic Medicine, Hokkaido University)
A whole animal platform for discovering novel anti-cancer drugs

15:40-15:55 Y-03(P-28): **Takuro Horii** (Institute for Molecular and Cellular Regulation, Gunma University)
Generation of epigenetic disease model mice by dCas9-SunTag epigenome editing system

15:55-16:10 Y-04(P-04): **Keisuke Shimada** (Research Institute for Microbial Diseases, Osaka University)
Molecular mechanism of mitochondrial sheath formation revealed through gene-edited mice

16:10-16:30 **Coffee Break**

Session 3: Cancer Biology and Regulation

Chairs: Eiji Hara (Research Institute for Microbial Diseases/ Immunology Frontier Research Center, Osaka University)

Yusuke Maeda (Research Institute for Microbial Diseases, Osaka University)

16:30-16:55 S-06: **Kunio Matsumoto** (Cancer Research Institute of Kanazawa University)
Macrocyclic Peptide-Based Inhibition and Nano-Imaging of HGF

16:55-17:10 Y-05(P-10): **Masanori Ikeda** (Institute of Development, Aging and Cancer, Tohoku University)
Dysregulation of kinetochore structure related to chromosomal instability in cancer cells

17:10-17:25 Y-06(P-12): **Takeharu Sakamoto** (The Institute of Medical Science, The University of Tokyo)
Mint3 in stromal cells promotes metastatic niche formation

17:25-17:40 Y-07(P-13): **Tatsunori Nishimura** (Cancer Research Institute of Kanazawa University)
Cancer treatments targeting mitochondrial enzymes of one-carbon metabolism

17:40-17:55 Y-08(P-16): **Shinpei Kawaoka** (Institute for Frontier Life and Medical Sciences, Kyoto University)
Utilizing enhancer genetics to understand the mechanisms underlying cancer-dependent physiological alteration in host organs

18:00-20:00 **Welcome Reception** at 2F Restaurant Minerva

Thursday, October 3, 2019

Session 4: Cellular Signaling and Development

Chairs: Tohru Ishitani (Research Institute for Microbial Diseases, Osaka University/ Institute for Molecular and Cellular regulation, Gunma University)

Daisuke Yamazaki (Research Institute for Microbial Diseases, Osaka University)

09:00-09:25 S-07: **Takehiko Sasaki** (Medical Research Institute, Tokyo Medical and Dental University)
Molecular dissection of phosphoinositides

09:25-09:50 S-08: **Tohru Ishitani** (Research Institute for Microbial Diseases, Osaka University/ Institute for Molecular and Cellular regulation, Gunma University)
Cell competition corrects noisy Wnt morphogen gradients to achieve robust patterning

09:50-10:15 S-09: **Yusuke Ono** (Institute of Molecular Embryology and Genetics, Kumamoto University)
Positional memory governs stem cell function in adult skeletal muscle

10:15-10:35 **Coffee break**

10:35-10:50 Y-09(P-24): **Taku Sato** (Medical Research Institute, Tokyo Medical and Dental University)
Regulated IFN-signal preserves stemness of intestinal stem cells

Special Lecture

Chair: Taroh Kinoshita (Research Institute for Microbial Diseases, Osaka University)

10:50-11:30 **Yasu S. Morita** (University of Massachusetts Amherst, USA)
Where Do You Build the Wall? Membrane Domains for Spatiotemporally Coordinated Cell Envelope Biogenesis in *Mycobacterium tuberculosis*

11:30-12:30 **Luncheon Poster Session** at 3F Main conference room
(Complimentary light meal and soft drinks)

Session 5: Immune Regulation and Diseases

Chairs: Kazuhiro Suzuki (Immunology Frontier Research Center & Research Institute for Microbial Diseases, Osaka University)

Hisamichi Naito (Research Institute for Microbial Diseases, Osaka University)

12:30-12:55 S-10: **Shinichiro Sawa** (Medical Institute of Bioregulation, Kyushu University)
RANKL⁺ mesenchymal cell is the genuine lymphoid tissue organizer cell in the developing lymph node

- 12:55-13:20 S-11: **Seiji Fukumoto** (Institute of Advanced Medical Sciences, Tokushima University)
FGF receptor 1 works as a phosphate sensor to regulate serum phosphate level
- 13:20-13:35 Y-10(P-21): **Daisuke Sugiura** (Institute of Advanced Medical Sciences, Tokushima University)
Restriction of PD-1 function by cis-PD-L1/CD80 interactions is required for optimal T cell response
- 13:35-13:50 Y-11(P-34): **Shinjiro Hino** (Institute of Molecular Embryology and Genetics, Kumamoto University)
The roles of flavin-dependent demethylases in metabolic reprogramming
- 13:50-14:05 Y-12(P-23): **Motoko Unoki** (Medical Institute of Bioregulation, Kyushu University)
Relationship between the CDCA7/HELLS chromatin remodeling complex and NHEJ in molecular pathogenesis of ICF syndrome
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- 14:05-14:15 **Poster Awards Ceremony**
Yoshiharu Matsuura (Director of Research Institute for Microbial Diseases, Osaka University)
- 14:15-14:20 **Closing Remarks**
Sho Yamasaki (Research Institute for Microbial Diseases/ Immunology Frontier Research Center, Osaka University)