

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

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### Wednesday, October 2, 2019

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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**

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*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  $\beta$ 2-Microglobulin Amyloid Fibril from Amyloidosis Patient using Solid-State NMR and Cryo-EM

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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)

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#### **Keynote Lecture**

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*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**

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

**Session 3: Cancer Biology and Regulation**

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

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**Thursday, October 3, 2019**

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**Session 4: Cellular Signaling and Development**

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*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

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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

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**Special Lecture**

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*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*

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

**Session 5: Immune Regulation and Diseases**

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*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<sup>+</sup> 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)