

## Fundamental Biological Principles and Cancer

Cancer Research Institute of Kanazawa University  
October 13-14, 2022  
Kanazawa university, Japan

Thursday, October 13, 2022

12:30-13:00 **Registration**

13:00-13:05 **Opening Remarks**

**Kunio Matsumoto** (Director of Cancer Research Institute, Vice president, Kanazawa University)

### Session 1 (Chair Noriko Goto, Masaya Ueno )

13:05-13:30 S -01: **Tetsuro Yoshimaru** (Institute of Advanced Medical Sciences, Tokushima University)  
The plasma membrane BIG3-PHB2 complex contributes to the acquisition of trastuzumab-resistance in HER2-positive breast cancer

13:30-13:55 S -02: **Kozo Tanaka** (Institute of Development, Aging and Cancer, Tohoku University)  
Chromosomal instability induced by chromosome dynamics in cancer cells

13:55-14:07 Y -01: **Yutaka Kasai** (The Institute of Medical Science, The University of Tokyo)  
Trans-homophilic interaction of CADM1 promotes organ infiltration of T-cell lymphoma by adhesion to vascular endothelial cells

14:07-14:19 Y -02: **Shunya Tsuji** (Research Institute for Microbial Diseases, Osaka University)  
SARS-CoV-2 and cellular senescence

14:19-14:31 Y -03: **Taisho Yamada** (Institute for Genetic Medicine, Hokkaido University)  
RIG-I restrains SARS-CoV-2 replication in human lung cells without activation of innate immune signaling

14:31-14:45 **Break**

### International Symposium (Chair Masanobu Oshima, Eishu Hirata)

14:45-14:50 **Opening Remarks**  
**Shinichi Nakamura** (Trustee(Research, Social Co-creation, and Graduate School Support), Kanazawa University)

14:50-15:20 I -01: **Koji Itahana** (DUKE-NUS, Singapore)  
The potential role of multi-drug resistance protein ABCB1 in tumor suppression in bats

15:20-15:32 Y-04: **Yasuto Takeuchi** (Cancer Research Institute, Kanazawa University)  
The membrane-linked adaptor FRS2 • fashions a cytokine-rich microenvironment that promotes breast cancer carcinogenesis

15:32-16:02 I-02: **S. Tiong Ong** (DUKE-NUS, Singapore)  
Predicting primary resistance to cancer targeted therapies at diagnosis: lessons from chronic myeloid leukemia

16:02-16:10 **Break**

16:10-16:35 S-03: **Yoshikazu Johmura** (Cancer Research Institute, Kanazawa University)  
Identification and functional analysis of senescent cells in tumor microenvironment

16:35-17:05 I-03: **Enrico Petretto** (DUKE-NUS, Singapore)  
Systems Genetics identifies WWP2 as a new target for fibrotic disease in fibroblasts and macrophages

17:05-17:20 **Break**

## **Session 2 (Chair Atsushi Hirao)**

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17:20-17:45 S-04: **Kosuke Hashimoto** (Institute for Protein Research, Osaka University)  
Single-cell transcriptome analysis of human immune cells and early embryos

17:45-17:57 Y-05: **Ryoji Kawakami** (Institute for Frontier Life and Medical Sciences, Kyoto University)  
Coordinated activation of enhancer elements for thymic Treg development and immunological self-tolerance

17:57-18:09 Y-06: **Akiko Satoh** (Institute of Development, Aging and Cancer, Tohoku University)  
The role of hypothalamic neurons in sleep, aging and longevity

Friday, October 14, 2022

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### Session 3 (Chair Dominic Voon, Kazuhiro Murakami)

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9:00-9:25 S -05: **Kazuhiro Suzuki** (Research Institute for Microbial Diseases, Osaka University)  
Novel control mechanisms of lymphocyte trafficking

9:25-9:50 S -06: **Izumi Tetsuro** (Institute for Molecular and Cellular Regulation, Gunma University)  
Roles of the GDF3-ALK7 axis in adiposity

9:50-10:02 Y -07: **Junko Sasaki** (Medical Research Institute, Tokyo Medical and Dental University)  
Premature ovarian insufficiency in mice lacking phosphoinositide-metabolizing enzymes

10:02-10:14 Y -08: **Kou Motani** (Institute of Advanced Medical Sciences, Tokushima University)  
ACBD3 forms specialized ER-Golgi contact sites to drive the ER exit of STING

10:14-10:26 Y -09: **Macpherson Tom** (Institute for Protein Research, Osaka University)  
Cell type-specific control of reward learning in the brain

10:26-10:40 **Break**

### Session 4 (Chair Toshinari Minamoto, Ryu Imamura)

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10:40-11:05 S -07: **Nobuo Noda** (Institute for Genetic Medicine, Hokkaido University)  
Molecular mechanisms underlying autophagosome biogenesis

11:05-11:17 Y -10: **Eiji Miyauchi** (Institute for Molecular and Cellular Regulation, Gunma University)  
Gut microbiota modulates inflammation in the central nervous system

11:17-11:29 Y -11: **Minako Ito** (Medical Institute of Bioregulation, Kyushu University)  
Immune cell dynamics and role in central nervous system diseases

11:29-11:41 Y -12: **Jun Hatakeyama** (Institute of Molecular Embryology and Genetics, Kumamoto University)  
Strategies for the expansion of cerebral cortex in primates

11:41-13:00 **Lunch**

### Poster Session & Coffee Break

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13:00-14:00 P -01: **Yukako Nishimura** (Institute for Genetic Medicine, Hokkaido University)  
A cross-talk between microtubules and focal adhesions regulates dynamics of actin cytoskeleton

P -02: **Madoka Kawaguchi** (Institute of Development, Aging and Cancer, Tohoku University)  
Extracellular Domains I and II of CD44 mediate its trans-homophilic dimerization and tumor cluster aggregation

P -03: **Ryosuke Kobayashi** (Institute for Molecular and Cellular Regulation, Gunma University)  
Epigenetic dysregulations in the lysine methyltransferase (KMT2) deficient endometrial cancer cells

P -04: **Nichika Sato** (The Institute of Medical Science, The University of Tokyo)  
A novel E3 ligase is involved in Unfolded Protein Response through Ubiquitination of eS7A and up-regulation of Hac1 production in yeast

P -05: **Yoshimi Okamoto** (Medical Research Institute, Tokyo Medical and Dental University)  
Molecular mechanism of YAP-dependent hepatocyte elimination

P -06: **Yuanyuan Zhang** (Cancer Research Institute, Kanazawa University)  
Application of CDK4/6 inhibition therapies to PDACs

P -07: **Yoko Fujita-Fujiharu** (Institute for Frontier Life and Medical Sciences, Kyoto University)  
Structural basis of Marburg virus helical nucleoprotein-RNA complex formation

P -08: **Yuki Akieda** (Research Institute for Microbial Diseases, Osaka University)  
Abnormal pH environment interrupts cell competition-mediated developmental robustness

P -09: **Koki Sakurai** (Institute for Protein Research, Osaka University)  
Altered behavior and increased neuroinflammation in Importin  $\alpha$ 4/KPNA4 KO mice

P -10: **Yosuke Matsushita** (Institute of Advanced Medical Sciences, Tokushima University)  
RHBDL2 has essential roles for glutaminolysis and chemoresistance in triple negative breast cancer

P -11: **Akinobu Matsumoto** (Medical Institute of Bioregulation, Kyushu University)  
Physiological functions of novel proteins encoded by hidden ORFs

P -12: **Ryuki Shimada** (Institute of Molecular Embryology and Genetics, Kumamoto University)  
The female-specific regulation of meiotic cell cycle in murine germ cells

P -13: **Shinya Ohta** (Institute for Genetic Medicine, Hokkaido University)  
Formation of pericentromeric heterochromatin via ZNF518s that link satellite DNA to heterochromatin

P -14: **Fang Zhenzhou** (Institute of Development, Aging and Cancer, Tohoku University)  
Aurora A-dependent polyubiquitination of OLA1 regulates centrosome number through controlling the

P -15: **Ikuko Maejima** (Institute for Molecular and Cellular Regulation, Gunma University)  
The role of small GTPase protein Rab35 in brain development

P -16: **Hirofumi Kosuge** (The Institute of Medical Science, The University of Tokyo)  
Identification and validation of multi-specific interactions of a tumor suppressor protein PRELP

P -17: **Yoshitaka Murota** (Medical Research Institute, Tokyo Medical and Dental University)  
Establishment of a high-content polymer array screening system to explore niche mimicries for cancerous cells

P -18: **Masaya Ueno** (Cancer Research Institute, Kanazawa University)  
Lysosomes regulate oncogenic signals in acute myelogenous leukemia

P-19: **Kazunari Aoki**

(Institute for Frontier Life and Medical Sciences, Kyoto University)

Identification of factors essential for CXCR4 signaling in leukemic cells using CRISPR dropout screens

P -20: **Liu Yafei** (Research Institute for Microbial Diseases, Osaka University)  
An infectivity-enhancing site on the SARS-CoV-2 spike protein targeted by antibodies

P -21: **Sho Tabata** (Institute for Protein Research, Osaka University)  
Induction of cellular senescence by sustained NF  $\kappa$  B activation

P -22: **Motonori Matsusaki** (Institute of Advanced Medical Sciences, Tokushima University)  
Endoplasmic Reticulum Stress Sensor IRE1 Directly Detects Misfolded Insulin by Oligomerization

P -23: **Kazuhiko Kawata** (Medical Institute of Bioregulation, Kyushu University)  
Essential role of ER membrane complex subunit 1 (EMC1) in B cell development

P -24: **Yasushi Yabuki** (Institute of Molecular Embryology and Genetics, Kumamoto University)  
RNA phase transition disrupts  $\alpha$ -Synuclein proteostasis

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#### Session 5 (Chair Chiaki Takahashi)

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14:00-14:25 S -08: **Masaki Takahashi** (The Institute of Medical Science, The University of Tokyo)  
Generation of RNA aptamers and their applications in molecular biology

14:25-14:50 S -09: **Itoshi Nikaido** (Medical Research Institute, Tokyo Medical and Dental University)  
Identification of chromatin instability at the single-cell level from transcriptome data

14:50-15:15 S -10: **Yasuyuki Ohkawa** (Medical Institute of Bioregulation, Kyushu University)  
Chromatin regulation during skeletal muscle regeneration

15:15-15:25 **Break**

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#### Session 6 (Chair Takashi Suda)

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15:25-15:50 S -11: **Takahiro Ito** (Institute for Frontier Life and Medical Sciences, Kyoto University)  
Regulation on stem cells in myeloid leukemia: a metabolic perspective

15:50-16:15 S -12: **Minetaro Ogawa** (Institute of Molecular Embryology and Genetics, Kumamoto University)  
Modeling hematopoietic stem cell development in a dish

16:15-16:30 **Award Ceremony & Closing Remarks**

**Kunio Matsumoto** (Director of Cancer Research Institute, Vice president, Kanazawa University)