

KEY Forum: The 5th International Symposium
&
The 39th International Kumamoto Medical Bioscience Symposium

Frontiers in Epigenetics
- Health Path and Disease Path & Reproduction Dynamics -

November 20-22, 2024

Kumamoto City International Center, Kumamoto, Japan

Wednesday, November 20, 2024

13:00-13:10 Brief announcement

Opening Remarks
Akira Nakamura (Kumamoto University)

KEY FORUM part 1

Session 1: Early development

Chair: Hitoshi Niwa (Institute of Molecular Embryology and Genetics, Kumamoto University)

- 13:10-13:45 O1 **Alexander Meissner** (Max Planck Institute)
Non-canonical epigenetic regulation in development
- 13:45-14:10 O2 **Tomohiko Akiyama** (Yokohama City University)
The Roles of Sex Chromosome-Encoded Genes in Maintenance and Differentiation of Human Embryonic Stem Cells
- 14:10-14:35 O3 **Azusa Inoue** (RIKEN)
Polycomb regulation in early development
- 14:35-15:00 O4 **Akihiko Sakashita** (Keio University)
Retrotransposon-driven regulatory landscapes shape early developmental program in mammals
- 15:00-15:20 O5 **Mitsuhiro Endoh** (Kumamoto University)
The role of Polycomb in maintenance and differentiation of mouse embryonic stem cells
- 15:20-15:35 **Break**

Session 2: Reproduction & Germline

Chair: Kei-ichiro Ishiguro (Institute of Molecular Embryology and Genetics, Kumamoto University)

- 15:35-16:10 O6 **Xin Chen** (Johns Hopkins University)
A New Perspective on DNA Replication Components in Stem Cell Lineages
- 16:10-16:30 O7 **Hironori Abe** (Kumamoto University)
Sex chromosome-specific epigenetic regulation in male meiosis
- 16:30-16:50 O8 **Joji Watase** (Kumamoto University)
Ribosomal DNA copy number maintenance and germline immortality

- 16:50-17:15 O9 **Yuki Okada** (The University of Tokyo)
Tracking of Chromatin Dynamics during Spermiogenesis
- 17:15-17:40 O10 **Yuta Takahashi** (Kumamoto University)
Transgenerational inheritance of epigenetic signatures in mammals

Thursday, November 21, 2024

KEY FORUM part 2

Session 3: Chromatin Regulation

Chair: Ryuki Shimada (Institute of Molecular Embryology and Genetics, Kumamoto University)

- 09:00-09:25 O11 **Atsuya Nishiyama** (The University of Tokyo)
CDCA7 is an evolutionarily conserved hemimethylated DNA sensor in eukaryotes
- 09:25-09:50 O12 **Yoichi Shinkai** (RIKEN)
DNA methylation regulated by the HELLS-CDCA7 chromatin-remodeling complex
- 09:50-10:15 O13 **Junichi Nakayama** (National Institute for Basic Biology)
Mechanisms regulating Clr4/SUV39H histone methyltransferase activity
- 10:15-10:40 O14 **Kyohei Arita** (Yokohama City University)
Structural basis for inhibition of UHRF1 function by DPPA3
- 10:40-10:55 **Break**

Session 4: Development

Chair: Shinjiro Hino (Institute of Molecular Embryology and Genetics, Kumamoto University)

- 10:55-11:30 O15 **Makoto Tachibana** (Osaka University)
Role of iron metabolism in epigenetic regulation
- 11:30-11:55 O16 **Hiroaki Okae** (Kumamoto University)
Direct induction of human trophoblast stem cells from late-gestation placentas
- 11:55-12:30 O17 **Hongmei Wang** (Chinese Academy of Sciences)
Unraveling mammalian placentation across species.
- 12:30-13:30 **Group photo shooting
Lunch & Discussion**

Symposium on medical and life science 2024

Session 5: New Technology

Chair: Miki Bundo (Kumamoto University)

- 13:30-13:50 O18 **Kan Etoh** (Kumamoto University)
Role of ACLY-mediated citrate metabolism in cellular senescence
- 13:50-14:10 O19 **Yutaka Nakachi** (Kumamoto University)
MORE-RNAseq: a pipeline of quantifying the retrotransposition-capable L1 expression

Session 6: Inflammation

Chair: *Hiroaki Okae (Institute of Molecular Embryology and Genetics, Kumamoto University)*

- 14:10-14:45 O20 **Musa Mhlanga** (Radboud University)
Epigenetics: at the apex of innate immune memory
- 14:45-15:05 O21 **Daisuke Kurotaki** (Kumamoto University)
Cis-regulatory code of myeloid cell differentiation during infection
- 15:05-15:25 O22 **Tomoaki Koga** (Kumamoto University)
Epigenetic regulation of macrophage polarization
- 15:25-15:40 **Break**

Session 7: Cancer & Aging

Chair: *Joji Watase (Institute of Molecular Embryology and Genetics, Kumamoto University)*

- 15:40-16:05 O23 **Noriko Saitoh** (The Cancer Institute of JFCR)
Nuclear long non-coding RNAs in 3D genome structure and tumor dormancy
- 16:05-16:25 O24 **Hiroto Ohguchi** (Kumamoto University)
Roles of epigenetic regulation in multiple myeloma
- 16:25-16:50 O25 **Takayuki Hoshii** (Chiba University)
The SETD1B catalytic domain regulates H3K4me3 breadth and MYC expression in MLL-rearranged leukemia
- 16:50-17:15 O26 **Motoshi Hayano** (Keio University)
Loss of epigenetic information drives aging
- 17:15-17:35 O27 **Jun-ichirou Yasunaga** (Kumamoto University)
Epigenetic regulation induced by human T-cell leukemia virus type1; Its implications for oncogenesis of adult T-cell leukemia

17:35 – 20:00 **Poster session & Reception (4th Floor)**

Friday, November 22, 2024

Session 8: Lifestyle disease

Chair: *Tomoaki Koga (Institute of Molecular Embryology and Genetics, Kumamoto University)*

- 09:00-09:35 O28 **J. Andrew Pospisilik** (Van Andel Institute)
Variegating mechanisms as drivers of ‘hidden’ disease risks
- 09:35-09:55 O29 **Yuichiro Arima** (Kumamoto University)
Epigenomic Regulation Mediated by Ketone Bodies in Cardiomyocytes
- 09:55-10:15 O30 **Shinjiro Hino** (Kumamoto University)
The roles of riboflavin-dependent enzymes in adipose tissue development and plasticity
- 10:15-10:30 **Break**

Session 9: Neuropsychiatry • Transposon

Chair: Kazuya Iwamoto (Kumamoto University)

- 10:30-11:05 O31 **Geoff Faulkner** (University of Queensland)
L1 retrotransposons, somatic mosaicism and gene regulation in the mammalian brain
- 11:05-11:30 O32 **Kenji Ichiyanagi** (Nagoya University)
Epigenetic regulation of retrotransposons during male germ cell development in the mouse
- 11:30-11:55 O33 **Kinichi Nakashima** (Kyushu University)
Pathogenic mechanisms driven by endogenous DNA ligands shared across models of autism spectrum disorders
- 11:55-12:20 O34 **Yusuke Kishi** (The University of Tokyo)
Epigenetic regulation during neuronal aging
- 12:20-12:40 O35 **Miki Bundo** (Kumamoto University)
Detection of novel somatic LINE-1 insertions at single neurons of patients with schizophrenia
- 12:40-12:45 **Closing Remarks**
Yuichi Oike (Kumamoto University)