

シンポジウム

第1日目11月28日(水)

1S-01	Room 1 (1F Main Hall)	9:00-11:15 [E]
Development of novel technologies derived from genome editing		
Organizer : Takashi Yamamoto (Hiroshima University)		
1S-01-1		[9:00]
MMEJ-mediated genome editing in cultured cells and animals		
Takashi Yamamoto (Hiroshima University)		
1S-01-2		[9:15]
Precise human disease allele creation and correction through microhomology-mediated end joining		
Knut Woltjen ¹ , Shin-Il Kim ¹ , Janin Grajcarek ¹ , Harunobu Kagawa ¹ , Mitchell Braam ² , Fabian Ocegueda-Yanez ¹ , Mitsujiro Osawa ¹ , Cantas Alev ¹ , Timothy J. Kieffer ² (¹ Center for iPS Cell Research and Application (CiRA), Kyoto University, Japan, ² University of British Columbia, Canada)		
1S-01-3		[9:45]
CRISPR-Cas-mediated targeted genome editing in human cells		
Tomoji Mashimo ^{1,2} , Hiroyuki Morisaka ^{3,4} , Kazuto Yoshimi ^{1,2} , Junji Takeda ² (¹ GERDC, Grad Sch of Med, Osaka Univ, ² TEXIS, Grad Sch of Med, Osaka Univ, ³ Dept of Genome Bio, Grad Sch of Med, Osaka Univ, ⁴ Dept of Dermat, Kochi Med Sch, Kochi Univ)		
1S-01-4		[10:15]
Identification of cell penetrating peptide and its application to a protein-based cellular engineering for cell therapies		
Yukihito Ishizaka ¹ , Tomoki Takashina ¹ , Tetsushi Sakuma ² , Takashi Yamamoto ² (¹ Dept of Intractable Dis, NCGM, ² Dept of Math Life Sci, Hiroshima Univ)		
1S-01-5		[10:45]
DNA memory biology		
Nozomu Yachie (The University of Tokyo)		
1S-02	Room 2 (3F 301)	9:00-11:15 [E]
Molecular Mechanisms for Cell Division		
Organizer : Tatsuo Fukagawa (Osaka University)		
Co-chair : Iain Cheeseman (Whitehead Institute for Biomedical Research, MIT)		
1S-02-1		[9:00]
Toward the development of a "next-generation" mitotic chromatid reconstitution assay		
Keishi Shintomi, Tatsuya Hirano (Chromosome Dynamics Laboratory, RIKEN)		
1S-02-2		[9:20]
A mechanism that ensures completion of DNA replication in pluripotent stem cells		
Yasunao Kamikawa, Tomomi Tsubouchi (National Institute for Basic Biology)		
1S-02-3		[9:36]
Mechanisms of dynein-based force generation at the cell cortex and spindle poles during metaphase		
Tomomi Kiyomitsu (Nagoya University)		
1S-02-4		[9:52]
Mechanism of cell division in plants		
Gohta Goshima (Nagoya University)		
1S-02-5		[10:13]
Spatial control of time during chromosome segregation		
Helder Maiato ¹ , Olga Afonso ^{1,2} (¹ i3S - Institute for Research and Innovation in Health, University of Porto, ² IBMC - Institute for Cell and Molecular Biology, University of Porto)		

1S-02-6	[10:34]
Dynamics of CCAN-KMN interaction in vertebrate kinetochore during mitotic progression	
Masatoshi Hara, Mariko Ariyoshi, Tetsuya Hori, Tatsuo Fukagawa (FBS, Osaka Univ.)	
1S-02-7	[10:54]
From hibernation to proliferation: Modulating centromere and kinetochore function across cell state	
Iain Cheeseman (Whitehead Institute)	
1S-03 Room 3 (3F 302)	9:00-11:15 [E]
Non-coding DNA tells the past, the present and the future	
Organizer : Takehiko Kobayashi (The University of Tokyo)	
Introduction	[9:00]
1S-03-1	[9:05]
Non coding transcription regulates stability and copy number of the ribosomal RNA gene	
Takehiko Kobayashi ^{1,2} , Shun Hosoyamada ¹ , Tetsushi Iida ¹ , Mariko Sasaki ¹ (Inst for Quantitative Biosciences (IQB), Univ of Tokyo, ² CRIIM, Univ of Tokyo)	
1S-03-2	[9:25]
Amplification of new satellite DNA and co-option of existing satellite DNA coordinately drive adaptation of owl monkeys to nocturnal lifestyle	
Akihiko Koga (Primate Inst, Kyoto Univ)	
1S-03-3	[9:50]
Impacts of DNA break formation at non-coding genome on genome rearrangements	
Kunihiko Ohta (Dept. of Life Sciences, The Univ. of Tokyo)	
1S-03-4	[10:15]
Gene domestication from retrotransposons contributed to Mammalian evolution	
Fumitoshi Ishino ¹ , Tomoko Kaneko-Ishino ² (¹ Med Res Inst, TMDU, ² Sch of Med, Tokai University)	
1S-03-5	[10:40]
Epigenetic variation in Arabidopsis	
Magnus Nordborg (Gregor Mendel Institute, Austrian Academy of Sciences)	
Conclusion	[11:10]
1S-05 Room 5 (3F 304)	9:00-11:15 [E]
New Principles of Morphogenesis, unraveled by advanced multidisciplinary approach	
Organizer : Tohru Ishitani (Gunma University)	
Introduction	[9:00]
1S-05-1	[9:01]
From the pattern formation to the 3D shape construction	
Shigeru Kondo (Frontier Bioscience, Osaka University)	
1S-05-2	[9:22]
Phase separation and flow of tight junction components are required for tight junction formation and maturation	
Carl-Philipp Heisenberg (IST Austria)	
1S-05-3	[9:48]
Spatio-temporal fate coordination in skin homeostasis	
Kyogo Kawaguchi (RIKEN BDR · Noneq biophys)	

1S-05-4 [10:09]

Intracellular pH gradient: A novel player involved on the vertebrate embryo patterningMasayuki Oginuma^{1,2}, Yukiko Harima^{2,3}, FengZhu Xiong², Olivier Pourquié^{2,3} (¹Lab of Integrated Signaling Systems, Department of Molecular Medicine Institute for Molecular & Cellular Regulation, Gunma University, ²Department of Genetics, Harvard Medical School and Department of Pathology, Brigham and Women's Hospital, ³Harvard Stem Cell Institute, Harvard University)

1S-05-5 [10:30]

Extracellular fluid dynamics regulates spatiotemporal distribution of secreted proteins in *Xenopus* embryos

Hidehiko Inomata, Kaori Niimi (RIKEN BDR, Axial Pattern Dynamics Team)

1S-05-6 [11:51]

Skeletal Muscle Regeneration Approached from Spatial Transcriptomics

Yasuyuki Ohkawa (Medical Institute of Bioregulation, Kyushu University)

Discussion [11:12]

1S-15 Room 15 (5F 501) 9:00-11:15 [E]

Cutting edge biology led by plant models

Organizer : Tetsuya Higashiyama (Nagoya University)

Introduction [9:00]

1S-15-1 [9:05]

Gene functions *in natura* - approaches using machine learning and mutants to analyze phenome, transcriptome and ecological data in naturally fluctuating environmentsKentaro K. Shimizu^{1,2}, Reinhold Stockenhuber¹, Reiko Akiyama¹, Nicolas Tissot³, Michele Wylter¹, Alex Widmer⁴, Roman Ulm³, Jianqiang Sun⁵, Jun Sese⁵, Rie Shimizu-Inatsugi¹, Toshiaki Tameshige², Aya Tonouchi⁶, Natsumaro Kutsuna⁶, Kenta Tanaka⁷, Hiroshi Kudoh⁸, Yasuhiro Sato⁹, Atsushi Nagano¹⁰, Eri Yamasaki¹, Roman Briskine¹, Tomoaki Nishiyama¹⁰, Tomonori Kume¹¹, Kaya Usun Shimizu¹², Iku Asano¹³, Takao Itoaka¹³, Shin Nagai¹⁴, Misako Yamazaki¹ (¹Dept Evol Biol Env Studies, Univ Zurich, ²Kihara Inst Biol Sci, Yokohama City Univ, ³Dept Bot Plant Biol, Univ Geneva, ⁴ETHZ, ⁵Artificial Intelligence Research Center, AIST, ⁶LPixel, Inc., ⁷Sugadaira, Tsukuba Univ, ⁸Center Ecol Res, Kyoto Univ, ⁹Fac Agr, Ryukoku Univ, ¹⁰Adv Sci Res Cen, Kanazawa Univ, ¹¹Fac Agr, Kyushu Univ, ¹²Fac Life Env Sci, Shimane Univ, ¹³Grad Sch Human Env Studies, Kyoto Univ, ¹⁴JAMSTEC)

1S-15-2 [9:30]

LZY-RLD interaction plays a crucial role in gravity signaling in Arabidopsis root gravitropismMiyo Terao Morita¹, Masahiko Furutani², Takeshi Nishimura¹, Chiemi Kondo⁴, Moritaka Nakamura¹, Masatoshi Taniguchi⁴, Yoshinori Hirano², Toshio Hakoshima³ (¹NIBB, ²Fujian Agr Forest Univ, ³NAIST, ⁴N/A)

1S-15-3 [9:55]

Is there a role of transgenerational epigenetic inheritance in adaptation?Marc W Schmid¹, Christian Heichinger¹, Diana Coman-Schmid¹, Daniela Guthörl¹, Lindsay Turnbull², Bernhard Schmid², Ueli Grossniklaus¹ (¹Dept of Plant and Microbial Biology, University of Zurich, Switzerland, ²Dept of Evolutionary Biology and Environmental Studies, University of Zurich, Switzerland)

1S-15-4 [10:20]

Evolution of carnivory in plants

Mitsuyasu Hasebe (National Institute for Basic Biology)

1S-15-5 [10:45]

Species Recognition in Fertilization and Its Manipulation

Tetsuya Higashiyama (ITbM, Nagoya University)

Conclusion [11:10]

1S-16	Room 16 (5F 502)	9:00-11:15 [E]
Direct reprogramming -artificial cell generation and its application-		
Organizer : Kinichi Nakashima (Kyushu University)		
Co-chair : Soeren Leinkamp (University Medical Center Freiburg)		
1S-16-1		[9:00]
Mechanistic insight of NeuroD1-induced microglia-neuron lineage switch		
Kinichi Nakashima (Graduate School of Medical Sciences, Kyushu University)		
1S-16-2		[9:27]
Direct reprogramming to hepatic and intestinal lineages		
Atsushi Suzuki (Div of Organo & Regene, Med Inst of Bioreg, Kyushu Univ)		
1S-16-3		[9:54]
In vivo reprogramming drives <i>Kras</i>-induced cancer development		
Yasuhiro Yamada (Center for Experimental Medicine and Systems Biology, Institute of Medical Science, University of Tokyo)		
1S-16-4		[10:21]
Direct reprogramming, cardiovascular differentiation, and regeneration		
Masaki Ieda (Department of Cardiology, Faculty of Medicine, University of Tsukuba)		
1S-16-5		[10:48]
Direct reprogramming of fibroblasts to induced renal tubular epithelial cells (iREC)		
Michael Kaminski, Roman Pichler, Jelena Tosic, Gerd Walz, Sebastian Arnold, Soeren Leinkamp (University Medical Center Freiburg, Germany)		
1S-17	Room 17 (5F 503)	9:00-11:15 [E]
Bioimaging: From Molecule to Tissue		
Organizer : Yoshie Harada (Osaka University)		
Co-chair : Madoka Suzuki (Osaka University)		
1S-17-1		[9:00]
Thermal response and thermogenesis at the single-cell and sub-cellular levels		
Madoka Suzuki ^{1,2} (¹ Inst for Protein Res, Osaka Univ, ² PRESTO, JST)		
1S-17-2		[9:20]
Bioimaging and Biosensing with Fluorescent Nanodiamonds in Cells		
Huan-Cheng Chang (Institute of Atomic and Molecular Sciences, Academia Sinica, Taiwan)		
1S-17-3		[10:00]
Label-Free Detection of Chemical Substances inside a Cell using Raman Imaging: Especially for the Detection of Water in a Cell		
Takakazu Nakabayashi (Graduate School of Pharmaceutical Sciences, Tohoku University)		
1S-17-4		[10:25]
Manipulating living systems by light		
Moritoshi Sato (Graduate School of Arts and Sciences, The University of Tokyo)		
1S-17-5		[10:50]
Video imaging of proteins at work by high-speed atomic force microscopy		
Noriyuki Kodera ^{1,2} , Toshio Ando ^{1,2} (¹ WPI NanoLSI, Kanazawa Univ., ² CREST, JST)		

第2日目11月29日(木)

2S-01 Room 1 (1F Main Hall) 9:00-11:15 [E]

Supramolecular world revealed by Cryo-EM

Organizer : Osamu Nureki (The University of Tokyo)

2S-01-1 [9:00]

Cryo-EM structure of the volume-regulated anion channel LRRC8A

 Osamu Nureki¹, Go Kasuya¹, Takanori Nakane¹, Tomohiro Nishizawa¹, Takeshi Yokoyama², Mikako Shirouzu², Masahide Kikkawa¹, Ryuichiro Ishitani¹ (¹The University of Tokyo, ²RIKEN)

2S-01-2 [9:27]

Structural basis of cellular transcription by RNA polymerase II

Shun-ichi Sekine (RIKEN BDR)

2S-01-3 [9:54]

Supramolecular Basis of Light Harvesting and Its Regulation in Plants

Zhenfeng Liu (National Laboratory of Biomacromolecules, Institute of Biophysics, Chinese Academy of Sciences)

2S-01-4 [10:21]

Cryo-EM for intercellular communication channels

 Atsunori Oshima^{1,2} (¹CeSPI, Nagoya Univ., ²Dept of Pharm Sci, Nagoya Univ.)

2S-01-5 [10:48]

Combination of cryo-electron microscopy and genetics for studying eukaryotic cellular structures

Masahide Kikkawa (Graduate School of Medicine, The Univ. of Tokyo)

2S-02 Room 2 (3F 301) 9:00-11:15 [E]

Stemness and metabolism for cancer malignancy

Organizer : Atsushi Hirao (Kanazawa University)

Introduction [9:00]

2S-02-1 [9:03]

Diet-induced stress and homeostasis maintenance in hematopoietic stem cells

Yuko Tadokoro, Atsushi Hirao (Div of Mol Genet, Cancer Res Inst, Kanazawa Univ)

2S-02-2 [9:23]

The role of gut microbial metabolites in obesity-associated liver cancer development via gut-liver axis

 Tze Mun Loo², Fumitaka Kamachi¹, Naoko Ohtani¹ (¹Dept. Pathophysiol. Osaka City Univ. Grad. Schl. Med., ²Div. Cell. Senes. Cancer Inst. JFCR)

2S-02-3 [9:43]

Diet, Metabolism and Cancer

Jing Chen (Winship Cancer Institute, Emory University)

2S-02-4 [10:08]

Revisiting glucose metabolism in cancer: lessons from a *Pkm* knock-in model

Nobuhiro Tanuma (Miyagi Cancer Center Research Institute)

2S-02-5 [10:28]

Reprogrammed branched-chain amino acid metabolism in myeloid leukemia

Takahiro Ito (Dept of Biochem & Mol Biol, Univ of Georgia)

2S-02-6 [10:48]

Exploring the beneficial and detrimental implications of lymphoma cell senescence *in vivo*

Clemens A Schmitt (Charite - University Medical Center and Max-Delbrück-Center for Molecular Medicine Berlin, Germany)

Conclusion [11:13]

2S-03	Room 3 (3F 302)	9:00-11:15 [E]
Cell cooperation through organelle sharing		
Organizer : Ken Sato (Gunma University) Co-chair : Mitsunori Fukuda (Tohoku University)		
Introduction		[9:00]
2S-03-1		[9:03]
The autophagy receptor ALLO-1 and the TBK1/IKK ϵ-related kinase regulate clearance of paternal mitochondria in <i>C. elegans</i>		
Miyuki Sato ¹ , Ken Sato ² (¹ Lab. of Mol. Memb. Biol, IMCR, Gunma Univ., ² Lab. of Mol. Traffic, IMCR, Gunma Univ.)		
2S-03-2		[9:28]
Regulation of lysosome activity during <i>C. elegans</i> larval development		
Rui Miao ^{1,2} , Xin Wang ³ , Meijiao Li ³ , Chonglin Yang ³ , Xiaochen Wang ² (¹ National Institute of Biological Sciences, Beijing, China, ² Institute of Biophysics, Chinese Academy of Sciences, Beijing, China, ³ College of Life Sciences, Yunnan University, China)		
2S-03-3		[9:58]
Mechanisms underlying upregulation of exosomes in cancer cells		
Chitose Oneyama ^{1,2} (¹ Div of Cancer Cell Regulation, Aichi Cancer Ctr Res Inst, ² JST PRESTO)		
2S-03-4		[10:23]
Melanosome transfer and plasma membrane dynamics of melanocytes during skin pigmentation in the chicken embryonic skin		
Ryosuke Tadokoro (Division of Biological Science Graduate School of Science, Kyoto University)		
2S-03-5		[10:48]
Analysis of melanosome transfer and transport mechanisms by M-INK, a novel tool for visualizing melanosomes		
Mitsunori Fukuda (Laboratory of Membrane Trafficking Mechanisms, Graduate School of Life Sciences, Tohoku University)		
Conclusion		[11:13]
2S-05	Room 5 (3F 304)	9:00-11:15 [E]
Ultimate understanding of cell competition		
Organizer : Yasuyuki Fujita (Hokkaido University) Co-chair : Tatsushi Igaki (Kyoto University)		
2S-05-1		[9:00]
Mechanisms and roles of tumor-suppressive cell competition		
Tatsushi Igaki (Graduate School of Biostudies, Kyoto University)		
2S-05-2		[9:27]
Regulation of cell fitness by cell competition during early mouse development		
Rodriguez A Tristan ¹ , Sarah Bowling ^{1,2} , Aida di Gregorio ¹ , Salvador Perez Montero ¹ , Jesus Gil ² (¹ National Heart and Lung Institute, Imperial College London, United Kingdom, ² London Institute of Medical Sciences MRC, Imperial College London, United Kingdom)		
2S-05-3		[9:54]
Cell competition corrects noisy Wnt morphogen gradient to achieve robust patterning		
Tohru Ishitani, Yuki Akieda, Shohei Ogamino (IMCR, Gunma University)		
2S-05-4		[10:21]
Reverse Engineering cell competition		
Charras Guillaume (University College London, UK)		

2S-05-5	[10:48]
Cell competition between normal and RasV12-transformed epithelial cells	
Yasuyuki Fujita (Institute for Genetic Medicine, Hokkaido University)	
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2S-15 Room 15 (5F 501)	9:00-11:15 [E]
Developmental Organology	
Organizer : Ryuichi Nishinakamura (Kumamoto University)	
2S-15-1	[9:00]
Building the kidney from pluripotent stem cells	
Ryuichi Nishinakamura (Institute of Molecular Embryology and Genetics, Kumamoto University)	
2S-15-2	[9:25]
Single-cell transcriptome and morphogenesis of developing trachea	
Mitsuru Morimoto (RIKEN Center for Biosystems Dynamics Research, Laboratory for Lung Development)	
2S-15-3	[9:50]
Translational Embryology Towards Therapy -from human liver organoid experience-	
Takanori Takebe ^{1,2,3} (¹ Tokyo Medical and Dental University (TMDU), ² Yokohama City University (YCU), ³ Cincinnati Children's (CCHMC))	
2S-15-4	[10:15]
Establishment of perfusable vascular network for understanding multicellular pattern formation	
Takashi Miura (Graduate School of Medical Sciences, Kyushu University)	
2S-15-5	[10:40]
Organ Regeneration and Anti-Aging Strategies	
Juan Carlos Izpisua Belmonte (Salk Institute for Biological Studies, La Jolla California)	
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2S-16 Room 16 (5F 502)	9:00-11:15 [E]
T cell repertoire, of mice and men: Competence and tolerance	
Organizer : Yousuke Takahama (National Institutes of Health, USA)	
Co-chair : Taku Okazaki (Tokushima University)	
2S-16-1	[9:00]
Molecular basis for thymic selection of an MHC-restricted T cell receptor (TCR) repertoire	
Alfred Singer ¹ , Francois Van Laethem ¹ , Jinghua Lu ² , Peter Sun ² (¹ National Cancer Institute, Bethesda, Maryland USA, ² National Institute of Allergy and Infectious Diseases)	
2S-16-2	[9:30]
The role of thymic cortical epithelial cells in positive selection of CD8 T cells	
Yousuke Takahama (Experimental Immunology Branch, CCR, NCI, NIH, USA)	
2S-16-3	[9:55]
The Thymus Medulla and T-cell Tolerance Mechanisms	
Graham Anderson, Emilie Cosway, Andrea White, Abdullah Alawam, Kieran James, Beth Lucas, Sarah Inglesfield, Sonia Parnell, William Jenkinson (University of Birmingham, United Kingdom)	
2S-16-4	[10:20]
LAG-3 regulates immunodominance and autoimmunity by its conformation-dependent recognition of MHCII	
Taku Okazaki, Takumi Maruhashi, Il-mi Okazaki, Daisuke Sugiura, Kenji Shimizu (Div Immun Reg, Inst Adv Med Sci, Tokushima Univ)	
2S-16-5	[10:45]
Standing on the shoulders of mice: adventures in human immunology	
Mark Davis ^{1,2,3,4} (¹ Howard Hughes Medical Institute, ² Institute for Immunity, Transplantation and Infection, ³ Immunology Program, ⁴ Department of Microbiology and Immunology, Stanford University School of Medicine, Stanford, CA)	

2S-17 Room 17 (5F 503)	9:00-11:15 [E]
Metabolic organ network in homeostasis and pathobiology	
Organizer : Yoshihiro Ogawa (Kyushu University / Tokyo Medical and Dental University) Co-chair : Ichiro Manabe (Chiba University)	
Introduction	[9:00]
2S-17-1	[9:02]
Lifestyle-related diseases viewed through metabolic organ network	
Yoshihiro Ogawa ^{1,2,3} (¹ Dept of Med Bioregul Sci, Kyushu Univ, ² Dept of Mol Cellular Metab, Tokyo Med Dent Univ, ³ AMED-CREST)	
2S-17-2	[9:24]
Neuronal Information Highways for Maintaining Metabolic Homeostasis at the Whole-Body Level	
Hideki Katagiri (Dept of Metab & Diabet, Tohoku University)	
2S-17-3	[9:46]
Gateway reflex, a new concept of local neuro-immune interaction	
Masaaki Murakami (Molecular Psychoimmunology, Institute for Genetic Medicine, Graduate School of Medicine, Hokkaido University)	
2S-17-4	[10:08]
Vagal regulation of hepatic glucose metabolism and its disorder	
Hiroshi Inoue (Institute for Frontier Science Initiative, Kanazawa University)	
2S-17-5	[10:30]
Molecular interconnections in metabolism and atherosclerosis	
Minna Woo (University of Toronto)	
2S-17-6	[10:52]
NeuroImmunoMetabolic regulation of cardiac homeostasis and heart failure	
Ichiro Manabe (Dept Dis Biol Mol Med, Chiba Univ)	
Conclusion	[11:14]

第3日目11月30日(金)

3S-01 Room 1 (1F Main Hall) 9:00-11:15 [E]

Cell fate determination in aging organs: stem cell aging vs. cellular senescence

Organizer : Emi Nishimura (Tokyo Medical and Dental University)

Co-chair : Eiji Hara (Osaka University)

Introduction [9:00]

3S-01-1 [9:02]

Cellular senescence: a double-edged sword in the fight against cancer

 Eiji Hara^{1,2} (¹Research Institute for Microbial Diseases, Osaka University, ²Cancer Institute, Japanese Foundation for Cancer Research)

3S-01-2 [9:27]

Paracrine functions of cellular senescence in cancer development

Ittai Ben-Porath (The Faculty of Medicine, The Hebrew University of Jerusalem, Jerusalem, Israel)

3S-01-3 [9:52]

Metabolic regulation of hematopoietic stem cells and their niche during aging

Keiyo Takubo (Dept Stem Cell Biol, National Center for Global Health and Medicine Research Institute)

3S-01-4 [10:17]

Stem cell dynamics in mammalian skin: a clue for organ aging

Emi Nishimura (Medical Research Institute, Tokyo Medical and Dental University)

3S-01-5 [10:42]

Stem Cell Aging in Human Intestines

Toshiro Sato, Kosaku Nanki, Mariko Shimokawa, Masataka Fujii (Keio University School of Medicine)

Discussion [11:07]

Conclusion [11:14]

3S-02 Room 2 (3F 301) 9:00-11:15 [E]

Trans-omic analysis resolves metabolic adaptation

Organizer : Tatsuhiko Tsunoda (Tokyo Medical and Dental University)

Co-chair : Shinya Kuroda (The University of Tokyo)

3S-02-1 [9:00]

Trans-omic and trans-species analysis drives precision medicine

Tatsuhiko Tsunoda (Dept of Med Sci Math, Tokyo Med & Dent Univ)

3S-02-2 [9:25]

Decoding genome-wide associations by trans-omics

 Katsuyuki Yugi^{1,2,3,4}, Tatsuhiko Tsunoda^{1,5,6}, Shinya Kuroda^{4,6} (¹RIKEN IMS, ²PRESTO, JST, ³Inst Adv Biosci, Keio Univ, ⁴Dept of Biol Sci, Univ of Tokyo, ⁵Med Res Inst, Tokyo Med and Dent Univ, ⁶CREST, JST)

3S-02-3 [9:50]

Widespread function of long non-coding RNAs

Piero Carninci (RIKEN Center for Integrative Medical Sciences)

3S-02-4 [10:15]

Mathematical trans-omics analysis towards predictive/individualized medicine

Eiryu Kawakami, Tetsuo Ishikawa, Keita Koseki (Med Sci Innovation Hub Program (MIH), RIKEN)

3S-02-5 [10:40]

TBD

Nancy J. Cox (Vanderbilt University School of Medicine)

3S-03	Room 3 (3F 302)	9:00-11:15 [E]
Tissue stem cell systems in homeostasis and regeneration		
Organizer : Fumiko Toyoshima (Kyoto University)		
Co-chair : Aiko Sada (University of Tsukuba)		
Introduction		[9:00]
3S-03-1		[9:03]
Developmental origin and induction processes of hair follicle stem cells		
Hironobu Fujiwara (RIKEN Center for Biosystems Dynamics Research)		
3S-03-2		[9:29]
Molecular mechanisms of hair follicle stem cells function in normal homeostasis of adult skin		
Tudorita (Doina) Tumber, Prachi Jain, Sangjo Kang, Nina Li, Flora Eun, Catherine He (Molecular Biology and Genetics, Cornell University, Ithaca, NY, USA)		
3S-03-3		[9:55]
Hair follicle neogenesis in adult skin		
Mayumi Ito (New York University School of Medicine)		
3S-03-4		[10:21]
Epidermal stem cell dynamics during pregnancy		
Fumiko Toyoshima (Institute for Frontier Life and Medical Sciences, Kyoto University)		
3S-03-5		[10:47]
Epidermal regeneration mechanism by cross-talk between necrotic epithelia and bone marrow mesenchymal stem cells		
Katsuto Tamai (Det of Stem Cell Therapy Sci, Osaka University)		
Conclusion		[11:13]
3S-05	Room 5 (3F 304)	9:00-11:15 [E]
Genome evolution through copy number changes		
Organizer : Hideki Innan (The Graduate University for Advanced Studies)		
3S-05-1		[9:00]
Overviewing the evolutionary fates of duplicate genes		
Hideki Innan (SOKENDAI)		
3S-05-2		[9:24]
TBD		
Evan Eichler (University of Washington)		
3S-05-3		[9:59]
Initial Sequence Maps of Endogenous Human Centromeres		
Karen Hayden Miga, Miten Jain, Hugh Olsen, Mark Akeson, David Haussler, Benedict Paten (University of California Santa Cruz Genomics Institute)		
3S-05-4		[10:24]
Evolution of dosage sensitive genes after whole genome duplications		
Takashi Makino (Graduate School of Life Sciences, Tohoku University)		
3S-05-5		[10:41]
Exaptation of endogenous retroviruses as functional genes in mammalian placentas		
Takayuki Miyazawa ¹ , So Nakagawa ² , Koichi Kitao ¹ , Kazuhiko Imakawa ³ (¹ Inst for Front Life and Med Sci, Kyoto Univ, ² Dept of Mol Life Sci, Tokai Univ Sch Med, ³ Inst of Agr Sci, Tokai Univ)		

3S-05-6 **[10:58]**
Identification of structural variations and analysis of their functional roles

 Akihiro Fujimoto^{1,2}, Hidewaki Nakagawa², Hitomi Yagi¹, Jing Hao Wong¹ (Department of Drug Discovery Medicine, Graduate School of Medicine, Kyoto University, ²Laboratory of Genome Sequencing Analysis, RIKEN Center for Integrative Medical Sciences)

3S-15 Room 15 (5F 501) **9:00-11:15 [E]**
A challenge to unveil molecular mechanisms underlying appropriate selective responses to the environmental information

Organizer : Ikue Mori (Nagoya University)

Introduction **[9:00]**
3S-15-1 **[9:01]**
A model organism in the wild: *C. elegans*

Marie-Anne Felix (Institute of Biology of the Ecole Normale Supérieure)

3S-15-2 **[9:41]**
Diversity and evolution of nematode genomes

Taisei Kikuchi (Faculty of Medicine, University of Miyazaki)

3S-15-3 **[10:04]**
Neural circuits regulating divergent escape responses in *Drosophila* larvae: implication for evo-devo of adaptive behaviors

 Akinao Nose^{1,2}, Suguru Takagi² (¹Dept Comp Sci, Univ of Tokyo, ²Dept Phys, Univ of Tokyo)

3S-15-4 **[10:27]**
Molecular mechanism for diversity of temperature preference in *Drosophila* species

Takeshi Awasaki (Kyorin University School of Medicine)

3S-15-5 **[10:50]**
Innate and acquired auditory neuronal pathways for zebra finch song learning

Yoko Yazaki-Sugiyama (OIST Graduate University/ IRCN)

Conclusion **[11:13]**
3S-16 Room 16 (5F 502) **9:00-11:15 [E]**
Emergence of new RNA potentials

Organizer : Yukihide Tomari (The University of Tokyo)

Co-chair : Shin-ichi Nakagawa (Hokkaido University)

3S-16-1 **[9:00]**
Preferential association of prion-like-domain-containing RNA binding proteins to functional lncRNA candidates

Shin-ichi Nakagawa (Facult. Pharm., Hokkaido Univ.)

3S-16-2 **[9:20]**
Long noncoding RNAs in brain development and glioma

Rebecca E. Andersen, Sung Jun Hong, Martina Malatesta, S. John Liu, David Wu, Daniel Lim (University of California, San Francisco)

3S-16-3 **[9:45]**
Functional polypeptides encoded by putative long non-coding RNAs

Akinobu Matsumoto, Keiichi I. Nakayama (Department of Molecular and Cellular Biology, Medical Institute of Bioregulation, Kyushu University)

3S-16-4 **[10:05]**
COMRADES reveals the Zika virus genomic structure inside human cells

 Eric Miska^{1,2} (¹University of Cambridge, ²Wellcome Sanger Institute)

3S-16-5	[10:30]
Metabolic RNA sequencing provides insights into the intracellular kinetics of small RNA silencing pathways	
Stefan L Ameres (Institute of Molecular Biotechnology, IMBA, Vienna Biocenter, Austria)	
3S-16-6	[10:55]
The 3' -end formation mechanism of silkworm piRNAs	
Natsuko Izumi ¹ , Keisuke Shoji ^{1,2} , Yukihide Tomari ^{1,3} (¹ IQB, Univ of Tokyo, ² Dept of Agri, Utsunomoya Univ, ³ Grad Sch of Front Sci, Univ of Tokyo)	
3S-17 Room 17 (5F 503)	9:00-11:15 [E]
Robotic Biology: hardware and software technology for accelerating life science researches	
Organizer : Tohru Natsume (AIST)	
Co-chair : Koichi Takahashi (RIKEN)	
Introduction	[9:00]
3S-17-1	[9:05]
A next generation Laboratory by effective Human-Robot Collaboration	
Miho Sasamata ¹ , Daisuke Shimojo ¹ , Yukiko Yamagishi ² , Haruna Iwaoka ¹ (¹ Modality Research Labs, Astellas Pharma Inc., ² IRM Satellite Office, Astellas Pharma Inc.)	
3S-17-2	[9:25]
Current & future solutions for Robotic biology	
Hirotaka Ito (Tecan Japan, Co., Ltd.)	
3S-17-3	[9:45]
Automated live single-cell imaging analysis with single-molecule sensitivity	
Masahiro Ueda ^{1,2} (¹ Graduate School of Frontier Biosciences, Osaka University, ² RIKEN Center for Biosystems Dynamics Research (BDR))	
3S-17-4	[10:05]
Automated Identification of Cell Differentiation Stages using Bright Field Microscope Image and LabDroid MAHOLO	
Toutai Mitsuyama, Archana Bajpai (National Institute of Advanced Industrial Science and Technology (AIST))	
3S-17-5	[10:25]
Impact of Machine Learning on Science	
Hiroshi Maruyama (Preferred Networks, Inc.)	
3S-17-6	[10:45]
The Future of the Relationship Between Biology and AI Researchers	
Koki Shimada ^{1,2} (¹ Dept. of Computer Science, UCL, ² SyntheticGestalt Inc.)	
Conclusion	[11:05]