

シンポジウム

【第1日目12月1日(火)】

1S2 第2会場(神戸ポートピアホテル 本館 地下1階 階案1) **9:00-11:30 [E]**
Molecular system for creating, decoding, and destroying glycans

 Organizers : Koichi Kato (National Institutes of Natural Sciences)
 Shinji Miyata (Nagoya University)

Introduction [9:00]

Shinji Miyata (Nagoya University)

1S2-1 [9:05]
Neurocan, a brain chondroitin sulfate proteoglycan, regulates neuronal migration and morphogenesis during corticogenesis

 Shinji Miyata^{1,2}, Chihiro Sato^{1,3}, Ken Kitajima^{1,3}, Hiroshi Kitagawa⁴ (¹Biosci. Biotech. Center, Nagoya Univ., ²Inst. Adv. Res., Nagoya Univ., ³Grad. Sch. Bioagr. Sci., Nagoya Univ., ⁴Dept. Biochem., Kobe Pharma. Univ.)

1S2-2 [9:25]
Functional analysis of enzymes involved in the formation of laminin-binding glycans displayed on α -dystroglycan

 Hirokazu Yagi¹, Koichi Kato^{1,2} (¹ Grad. Sch. of Pharm. Sci., Nagoya City Univ., ²Okazaki Inst. for Integr. Biosci., Nat. Inst. of Nat. Sci.)

1S2-3 [9:45]
Impact of tissue/animal-specific expression pattern of *N*-glycolylneuraminic acid

Yuko Naito-Matsui (Kobe Pharm. Univ.)

1S2-4 [10:05]
Chemical synthesis of correctly folded and misfolded glycoproteins for understanding of glycoprotein quality control system

Yasuhiro Kajihara (Dept. of Chem., Grad.Sch.of Sci., Osaka univ.)

1S2-5 [10:25]
Molecular recognition of glycopeptides by human immune receptor, PILR.

Katsumi Maenaka (Fac. Pharm. Sci., Hokkaido Univ.)

1S2-6 [10:45]
Glycan conformation, dynamics and interaction with lectin receptors: a structural glycobiology approach

Yoshiki Yamaguchi (Struct. Glycobiol. Team, RIKEN)

1S2-7 [11:05]
Towards Understanding the physiological role of non-lysosomal glycan catabolism

Tadashi Suzuki (RIKEN, Glycometabolome T.)

Conclusion [11:25]

Koichi Kato (National Institutes of Natural Sciences)

1S3 第3会場(神戸ポートピアホテル 本館 地下1階 階案2) **9:00-11:30 [E]**
Spontaneous pattern formation driven by cell-cell communication

 Organizers : Eisuke Nishida (Kyoto University)
 Miki Ebisuya (RIKEN)

Introduction [9:00]

Eisuke Nishida (Kyoto University)

1S3-1 [9:03]
Reconstitution of cell-cell communication mechanisms

Miki Ebisuya (RIKEN QBIC)

1S3-2 [9:32]

Regulatory circuitry initiating two-dimensional stomatal patterning in the plant epidermis

Keiko Torii^{1,2} (¹Howard Hughes Medical Institute, ²University of Washington)

1S3-3 [10:01]

Intercellular propagation of ERK activity and its role in collective cell migration.

Kazuhiro Aoki (Grad. Sch. of Med., Kyoto University)

1S3-4 [10:30]

Competitive interactions between normal and transformed epithelial cells

Yasuyuki Fujita (Dev. Mol. Onco., Inst. for Gen. Med., Hokkaido Univ.)

1S3-5 [10:59]

What we can learn from a novel mechanism of constructing the architectural skeleton of sponges: how the pattern of spicule-holding-up (SHU) points is determined

Noriko Funayama (京大・院理・生物科学専攻・生物物理)

Conclusion [11:28]

Miki Ebisuya (RIKEN)

1S4 第4会場(神戸ポートピアホテル本館地下1階 階差3) 9:00-11:30 [E]

Molecular Mechanisms of Brain and Mind development

Organizers : Fumio Matsuzaki (RIKEN)

Tomomi Shimogori (RIKEN)

Introduction [9:00]

Fumio Matsuzaki (RIKEN)

1S4-1 [9:02]

Cortical expansion during the development of mammalian complex brains

Fumio Matsuzaki (Cell Asymmetry, RIKEN, CDB)

1S4-2 [9:29]

The mechanisms of neuronal circuit formation and maturation in the postnatal brain

Tomomi Shimogori (RIKEN BSI)

1S4-3 [9:59]

Comprehensive 3D imaging of synaptic activity reveals rules directing experience-driven growth in awake brain

Kurt Haas, Kaspar Podgorski, Serhiy Opushnyev (Centre for Brain Health, University of British Columbia)

1S4-4 [10:29]

Stress-induced neuronal remodeling in the medial prefrontal cortex: Neuronal and microglial mechanisms

Tomoyuki Furuyashiki (Div. of Pharmacol., Grad. Sch. of Med., Kobe University)

1S4-5 [10:59]

Involvement of posttranslational and epigenetic modifications in developmental brain disorders: Bedside to bench, and back to bedside

Koko Ishizuka (Johns Hopkins University)

Conclusion [11:29]

Tomomi Shimogori (RIKEN)

1S14 第14会場(神戸国際会議場1階メインホール) **9:00-11:30 [E]**
科学研究費補助金 新学術領域研究「オートファジーの集学的研究：分子基盤から疾患まで」共催シンポジウム Autophagy

 Organizers : Noboru Mizushima (The University of Tokyo)
 Maho Hamasaki (Osaka University)

Introduction **[9:00]**

Noboru Mizushima (The University of Tokyo)

1S14-1 **[9:05]**
Formation and maturation of the autophagosome

Noboru Mizushima (Dept. of Biochem. & Mol. Biol., Grad. Sch. of Med., Univ. of Tokyo)

1S14-2 **[9:30]**
New Insights into Autophagy in Diseases

Tamotsu Yoshimori (Grad. Sch. of FBS/Med, Osaka Univ.)

1S14-3 **[9:55]**
Visualization of the autophagic process using beads incorporated into living cells

 Tokuko Haraguchi^{1,2,3}, Shouhei Kobayashi¹, Takako Koujin¹, Hiroko Osakada¹, Tomoko Kojidani^{1,4}, Chie Mori¹, Yasushi Hiraoka^{1,2,3} (¹Advanced ICT Res. Inst., NICT, ²Grad. Sch. of Front. BioSci., Osaka Univ., ³Grad. Sch. of Sci., Osaka Univ., ⁴JWU)

1S14-4 **[10:20]**
The lysosome as a signaling hub.

 Andrea Ballabio^{1,2,3} (¹Director Tigem (Telethon Institute of Genetics and Medicine), ²Professor of Medical Genetics, Department of Translational Medical Sciences, University of Naples "Federico II", Italy., ³Professor, Department of Molecular and Human Genetics, Baylor College of Medicine Jan and Dan Duncan Neurological Research Institute, Texas Children Hospital Houston, Texas, USA)

1S14-5 **[11:00]**
Molecular Mechanism of Autophagy Initiation in Yeast

 Hayashi Yamamoto¹, Sho W. Suzuki¹, Yuko Fujioka², Nobuo N. Noda², Yoshinori Ohsumi¹ (¹Frontier Research Center, Tokyo Tech, ²Institute of Microbial Chemistry)

1S15 第15会場(神戸国際会議場3階 国際会議室) **9:00-11:30 [E]**
Genomics and Epigenomics in Development and Evolution

 Organizers : Hiroyuki Takeda (The University of Tokyo)
 Koji Tamura (Tohoku University)

Introduction **[9:00]**

Hiroyuki Takeda (The University of Tokyo)

1S15-1 **[9:02]**
Avian phylogenomic analyses revealed the macroevolution patterns of bird genomes

 Guojie Zhang^{1,2} (¹China National Genebank, BGI-Shenzhen, Shenzhen, China, ²Section of Ecology and Evolution, Department of Biology, University of Copenhagen, Copenhagen, Denmark)

1S15-2 **[9:32]**
Acquisition of novel *cis*-elements behind bird macroevolution

 Ryohei Seki¹, Cai Li², Mao Kondo³, Tomohiko Sato³, Haruka Matsubara³, Daisuke Saito^{3,4}, Shinichi Hayashi⁵, Shiro Egawa³, Keiichi Kitajima³, Jiang Hu², Luohao Xu², Hailin Pan², Naoki A. Irie⁶, Guojie Zhang², Toshihiko Shiroishi¹, Koji Tamura³ (¹Mamm. Genet. Lab., NIG, ²China National Genebank, BGI-Shenzhen, ³Grad. Sch. of Life Sci., Tohoku Univ., ⁴FRIS, Tohoku Univ., ⁵Dept. of Genet., Cell Biol., and Dev., Univ. of Minnesota, ⁶Grad. Sch. of Sci., Univ. of Tokyo)

1S15-3 **[9:53]**
High dosage sensitivity of genes maintained after whole genome duplication

Takashi Makino (Grad. Sch. of Life Sci., Tohoku Univ.)



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| 1S15-4 | [10:14] |
| The biological function of invertebrate DNA methylation in pre-mRNA processing | |
| Miho M. Suzuki (National Institute for Basic Biology) | |
| 1S15-5 | [10:35] |
| Deciphering the genetic code for the vertebrate pluripotent epigenome | |
| Ryohei Nakamura ¹ , Masahiko Kumagai ¹ , Sumio Sugano ² , Yutaka Suzuki ² , Shinichi Morishita ² , Hiroyuki Takeda ¹ (¹ Dept. of Biol. Sci., Grad. Sch. of Sci., Univ. of Tokyo, ² Dept. of Comp. Biol and Med. Sci., Grad. Sch. of Front. Sci., Univ. of Tokyo) | |
| 1S15-6 | [10:56] |
| A genetic mechanism for Batesian mimicry in swallowtail butterfly | |
| Haruhiko Fujiwara, Hideki Nishikawa, Takuro Iijima (Grad. Sch. of Front. Sci., Univ. of Tokyo) | |
| Discussion | [11:26] |
| Conclusion | [11:28] |
| Koji Tamura (Tohoku University) | |

【第2日目12月2日(水)】
2S2 第2会場(神戸ポートピアホテル本館 地下1階 階案1) 9:00-11:30 [E]
Organelle biology: New pictures of cellular structures and functions

 Organizers : Toshiya Endo (Kyoto Sangyo University)
 Gia Voeltz (University of Colorado Boulder)

2S2-1 [9:00]
Protein and lipid trafficking for mitochondrial biogenesis

Toshiya Endo (Fac. of Life Sci., Kyoto Sangyo Univ.)

2S2-2 [9:25]
New insights into the molecular mechanisms and the molecular evolution of chloroplast protein import

Masato Nakai (Inst. Prot. Res., Osaka Univ.)

2S2-3 [9:50]
Import and assembly of mitochondrial proteins

Nikolaus Pfanner (Institute of Biochemistry and Molecular Biology, University of Freiburg, Germany)

2S2-4 [10:15]
Relationship between mitochondrial quality control and Parkinson's disease

Noriyuki Matsuda (Ubiquitin project, TMIMS)

2S2-5 [10:40]
Analysis of ultrastructure and molecular mechanism of the mitochondrion and peroxisome dividing machineries

 Yuuta Imoto¹, Yuichi Abe¹, Masanori Honsho¹, Kanji Okumoto², Masaki Yoshida³, Haruko Kuroiwa⁴, Tsuneyoshi Kuroiwa⁴, Yukio Fujiki^{1,2} (¹Med. Inst. of Bioregulation, Kyushu Univ., ²Dept. of Biol. & Grad. Sch. of Sys. Life Sci., Kyushu Univ., ³Grad. Sch. of Life and Environmental Sci., Univ. of Tsukuba, ⁴Dept. of Sci., Japan Woman's Univ.)

2S2-6 [11:05]
A tale of two dynamins during mitochondrial division

Gia Voeltz, Jason Lee (MCD Biology University of Colorado Boulder)

2S3 第3会場(神戸ポートピアホテル本館 地下1階 階案2) 9:00-11:30 [E]
For those with crystallophobia

 Organizers : So Iwata (Kyoto University/Riken)
 Mikako Shirouzu (RIKEN)

Introduction [9:00]

Mikako Shirouzu (RIKEN)

2S3-1 [9:05]
Solid-state NMR of membrane proteins

Toshio Yamazaki, Toshio Nagashima (CLST, RIKEN)

2S3-2 [9:35]
Electron 3D crystallography and single particle analysis of membrane proteins

Koji Yonekura (RIKEN SPring-8 Center)

2S3-3 [10:05]
DIFFRACTION BEFORE DESTRUCTION: IMAGING SINGLE PARTICLES WITH X-RAY LASERS

 Janos Hajdu^{1,2}, Filipe R.N.C. Maia^{1,2}, Tomas Ekeberg^{1,2} (¹Laboratory of Molecular Biophysics, Uppsala University, Sweden, ²The European XFEL, Hamburg, Germany)

2S3-4 [10:55]
Role of lipid molecules on the proton antiport in MATE multidrug transporter

Yuji Sugita (RIKEN Theoretical Molecular Science Labo.)

**Conclusion**

[11:25]

So Iwata (Kyoto University/Riken)

2S4 第4会場(神戸ポートピアホテル本館地下1階 階築3)

9:00-11:30 [E]

New technologies for imaging and regulation of cellular proteins: from subcellular region to whole bodiesOrganizers : Itaru Hamachi (Kyoto University)
Shigeki Kiyonaka (Kyoto University)**Introduction**

[9:00]

Itaru Hamachi (Kyoto University)

2S4-1

[9:00]

Synthetic molecules that control the location of proteins in living cellsShinya Tsukiji^{1,2} (¹Dept. of Sci. Technol. Innov., Nagaoka Univ. of Technol., ²Dept. of Bioeng., Nagaoka Univ. of Technol.)**2S4-2**

[9:30]

Visualization of native AMPA receptors in central nervous systems using a novel chemical labeling techniqueShigeki Kiyonaka^{1,2}, Sho Wakayama², Michisuke Yuzaki³, Itaru Hamachi^{2,4} (¹Dept. Tech. Ecol., GSGES, Kyoto Univ., ²Dept. Synth. Chem. & Biol. Chem. Grad. Sch. Eng., Kyoto Univ., ³Dept. Physiol. Sch. Med., Keio Univ., ⁴CREST, JST)**2S4-3**

[10:00]

Molecular and viral approaches to elucidate structure and function of neural circuitsFumitaka Osakada^{1,2,3} (¹Lab. of Cell. Pharmacol., Grad. Sch. of Pharm. Sci., Nagoya Univ., ²Lab. of Neural Information Processing, Inst. for Adv. Res., Nagoya Univ., ³PRESTO, JST)**2S4-4**

[10:30]

Regulatory mechanism of neural stem cells revealed by optical manipulation of gene expressionsItaru Imayoshi^{1,2,3,4}, Ryoichiro Kageyama^{2,3,5} (¹The Hakubi Center, Kyoto University, ²Institute for Virus Research, Kyoto University, ³CeMS, Kyoto University, ⁴Japan Science and Technology Agency, Precursory Research for Embryonic Science and Technology (PRESTO), ⁵Japan. 5Japan Science and Technology Agency, Core Research for Evolutional Science and Technology (CREST))**2S4-5**

[11:00]

CUBIC: whole-organ, whole-body imaging with single-cell resolution using chemical cocktailsKazuki Tainaka^{1,2}, Etsuo A Susaki^{1,2}, Shimpei I. Kubota¹, Hiroki Ueda^{1,2} (¹Dept. of Sys. Pharmacol., Grad. Sch. of Med., Univ. of Tokyo, ²Lab. for Syn. Biol., RIKEN QBiC)**2S14 第14会場(神戸国際会議場1階 メインホール)**

9:00-11:30 [E]

The life sciences elucidated by the analysis of angio/lymphangiogenesisOrganizers : Kohei Miyazono (The University of Tokyo)
Nobuyuki Takakura (Osaka University)**2S14-1**

[9:00]

Molecular and cellular mechanisms for the regulation of juxtapositional alignment of arteries and veins

Hiroyasu Kidoya, Nobuyuki Takakura (Dept. of Signal Transduction, RIMD, Osaka University)

2S14-2

[9:25]

Neuro-vascular crosstalk in the central nervous system

Yoshiaki Kubota (Dept of Vascular Biology, Keio Univ.)

2S14-3

[9:50]

Mechanotransduction in regulation of vascular homeostasis and remodeling

Jincai Luo (Institute of Molecular Medicine, Peking University)

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| 2S14-4 | [10:15] |
| Molecular mechanism underlying directional migration of endothelial tip cells during sprouting angiogenesis | |
| Shigetomo Fukuhara, Naoki Mochizuki (Dept. of Cell Biol., Natl. Cereb. & Cardiovasc. Res. Inst.) | |
| 2S14-5 | [10:40] |
| Semaphorin/Plexin signaling pathway in lymphatic vascular patterning | |
| Masanori Hirashima (Div. of Vasc. Biol., Grad. Sch. of Med., Kobe Univ.) | |
| 2S14-6 | [11:05] |
| New regulators of vascular sprouting and remodeling | |
| Young-guen Kwon (Yonsei University) | |
| 2S15 | 9:00-11:30 [E] |
| 第15会場 (神戸国際会議場 3階 国際会議室) | |
| Life driven by RNAs | |
| Organizers : Mikiko C. Siomi (The University of Tokyo) Kiyokazu Agata (Kyoto University) | |
| Introduction | [9:00] |
| Kiyokazu Agata (Kyoto University) | |
| 2S15-1 | [9:03] |
| A long noncoding RNA regulates an environmental sex determination in the crustacean <i>Daphnia magna</i> | |
| Yasuhiko Kato, Hajime Watanabe (Dept. Biotech., Grad. Sch. Eng., Osaka Univ.) | |
| 2S15-2 | [9:25] |
| Regulation of female fertility by lncRNA Neat1 | |
| Shinichi Nakagawa (RNA Biology Laboratory, RIKEN) | |
| 2S15-3 | [9:47] |
| RNA-directed Genome Rearrangement in the Ciliate <i>Oxytricha</i> | |
| Laura F. Landweber (Princeton University) | |
| 2S15-4 | [10:17] |
| Multiple regulations of pluripotent stem cell by PIWI in planarians | |
| Norito Shibata ¹ , Makoto Kashima ¹ , Kuniaki Saito ² , Haruhiko Siomi ² , Mikiko C. Siomi ³ , Kiyokazu Agata ¹ (¹ Dept. of Biophysics, Grad. Sch. of Sci., Kyoto Univ., ² Dept. of Mol. Biol., Keio Univ. Sch. of Med., ³ Dept. of Biol. Sci., Grad. Sch. of Sci., Univ. of Tokyo) | |
| 2S15-5 | [10:39] |
| Male Infertility Caused by Ubiquitination-deficient Mutations in Human Piwi (Hiwi) | |
| Lantao Gou, Junyan Kang, Peng Dai, Xin Wang, Feng Li, Mofang Liu (State Key Laboratory of Molecular Biology, Institute of Biochemistry and Cell Biology, Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences) | |
| 2S15-6 | [11:09] |
| PIWI-interacting RNA; its function and biogenesis | |
| Mikiko C. Siomi (Dept. of Biol. Sci., Grad. Sch. of Sci., Univ. of Tokyo) | |

【第3日目12月3日(木)】
3S2 第2会場(神戸ポートピアホテル本館 地下1階 階案1) 9:00-11:30 [E]
Nascent chains: the ribosome as a hub for protein quality control

 Organizers : Hideki Taguchi (Tokyo Institute of Technology)
 Toshifumi Inada (Tohoku University)

Introduction [9:00]

Hideki Taguchi (Tokyo Institute of Technology)

3S2-1 [9:02]
Ubiquitylation of Stalled Ribosome Triggers Ribosome Quality Control

Toshifumi Inada (Dept. of Mol. Cell Biol., Grad. Sch. of Pharm. Sci., Tohoku Univ.)

3S2-2 [9:24]
Structural insights into regulation and failure of eukaryotic translation termination

Roland Beckmann (Gene Center, Munich University)

3S2-3 [9:54]
Nascent chain-monitored remodeling of the Sec machinery for salinity adaptation of marine bacteria

 Hiroyuki Mori¹, Eiji Ishii¹, Shinobu Chiba², Narimasa Hashimoto¹, Seiji Kojima³, Michio Homma³, Koreaki Ito²,
 Yoshinori Akiyama¹ (¹Inst. Virus Res., Kyoto Univ., ²Kyoto Sangyo Univ., ³Grad. Sch. Sci., Nagoya Univ.)

3S2-4 [10:16]
Mapping the cotranslational chaperone network in eukaryotic cells

Judith Frydman (Stanford University, Stanford, CA 94305)

3S2-5 [10:46]
Molecular mechanism of the translation arrest by SecM

Zhuohao Yang, Ryo Iizuka, Yuanfang Guo, Shunsuke Yamashiro, Takashi Funatsu (Grad. Sch. of Pharm. Sci., Univ. of Tokyo)

3S2-6 [11:08]
Global analysis of yeast protein aggregation using a reconstituted cell-free translation system

Hideki Taguchi, Eri Uemura, Tatsuya Niwa (Grad. Sch. Biosci. and Biotech., Tokyo Tech.)

3S3 第3会場(神戸ポートピアホテル本館 地下1階 階案2) 9:00-11:30 [E]
Molecular Basis of Oxidative-Electrophilic Stress Response

 Organizers : Masayuki Yamamoto (Tohoku University)
 Masaaki Komatsu (Niigata University)

3S3-1 [9:00]
p62 promotes malignancy of hepatocellular carcinoma through Nrf2-dependent metabolic reprogramming

Masaaki Komatsu (Dept. Biochem., Grad. Sch. of Med., Niigata Univ.)

3S3-2 [9:30]
The regulation of p62-Nrf2-Keap1 axis in dysregulation of lipid metabolism and oxidative stress

 Soo han Bae^{1,2,3} (¹Severance Biomedical Science Institute, ²Yonsei Biomedical Research Institute, ³Yonsei University College of Medicine)

3S3-3 [10:00]
Redox regulation of magnesium-ion transporter MagEx/CNNM

Yosuke Funato, Daisuke Yamazaki, Hiroaki Miki (Dept. of Cell. Reg., Res. Inst. for Microb. Dis., Osaka Univ.)

3S3-4 [10:30]
Antioxidant Electrophilic Signaling Regulated by Reactive Sulfur Species and Its Translational Biosynthesis

Takaaki Akaike (Dept. of Health Sci. and Mol. Toxicol., Grad. Sch. Med., Tohoku Univ.)



3S3-5

[11:00]

Critical Roles Keap1-Nrf2 System Plays in Stress Response

Masayuki Yamamoto (Dept. of Med. Biochem., Grad. Sch. of Med., Tohoku Univ.)

3S4

第4会場(神戸ポートピアホテル 本館 地下1階 備案3)

9:00-11:30 [E]

Cell and Time

Organizers : Hitoshi Okamura (Kyoto University)

Yumiko Saga (National Institute of Genetics)

Introduction

[9:00]

Hitoshi Okamura (Kyoto University)

3S4-1

[9:02]

「Time in the Cell」 ~ Why is the circadian clock suppressed in pluripotent stem cells?~

Kazuhiro Yagita (Dept. of Physiol. and Syst. Biosci., Grad. Sch. of Med., Kyoto Pref. Univ. of Med.)

3S4-2

[9:25]

Dynamic expression of Notch ligand Dll1 during developmentHiromi Shimojo^{1,2}, Hiroshi Kori³, Akihiro Isomura², Toshiyuki Ohtsuka², Hitoshi Miyachi², Ryoichiro Kageyama^{1,2}
(¹iCeMS, Kyoto University, ²IVR, Kyoto University, ³Dept. of Information Sci., Ochanomizu University)**3S4-3**

[9:48]

An intrinsic buffering mechanism in spermatogonial stem cells controls the timing of mouse spermatogenesis

Yumiko Saga, Zhi Zhou (NIG)

3S4-4

[10:11]

Dynamics of stem cell system in intestinal epithelium.

Toshiro Sato, Yuki Ohta, Mariko Shimokawa, Yoshihiro Nakazato, Kosaku Nanki (Department of Gastroenterology, Keio University School of Medicine)

3S4-5

[10:34]

Liver polyploidy: Dr Jekyll or Mr Hide?

Chantal Desdouets (Institut Cochin, Inserm U1016, Paris)

3S4-6

[10:57]

Cell clock and cell cycleHitoshi Okamura^{1,2} (¹Dept. Systems Biol., Grad. Sch. Pharm. Sci., Kyoto Univ., ²CREST, JST)**Discussion**

[11:20]

Conclusion

[11:29]

Yumiko Saga (National Institute of Genetics)

3S14

第14会場(神戸国際会議場 1階 メインホール)

9:00-11:30 [E]

Customizing cells and organisms using genome editing

Organizers : Takashi Yamamoto (Hiroshima University)

Akitsu Hotta (Kyoto University)

3S14-1

[9:00]

Genome editing with programmable site-specific nucleases

Takashi Yamamoto (Dept. of Math. Life. Sci., Grad. Sch. of Sci., Hiroshima Univ.)

3S14-2

[9:10]

Structural basis for molecular mechanisms of CRISPR-Cas9

Osamu Nureki (Dept. of Bioph. and Bioch. Grad. Sch. of Sci., Univ. of Tokyo)



3S14-3

[9:30]

Genome-editing technologies in HIV research

Hiroataka Ebina, Shuhei Ueda, Yuka Kanemura, Naoko Misawa, Yoshio Koyanagi (Institute for Virus Research, Kyoto Univ.)

3S14-4

[9:50]

Improved PITCH systems: enhancing convenience, efficiency, and applicability of MMEJ-mediated gene knock-in

Tetsushi Sakuma, Shota Nakade, Yuto Sakane, Ken-ichi Suzuki, Takashi Yamamoto (Dept. of Math. and Life Sci., Grad. Sch. of Sci., Hiroshima Univ.)

3S14-5

[10:10]

Genome Editing in Stem Cells, Animals, and PlantsJin-soo Kim^{1,2} (¹Dept. of Chemistry, Seoul National Univ., ²Center for Genome Engineering, Institute for Basic Science)

3S14-6

[10:50]

Generation of genetically modified pigs by genome editing

Hiroshi Nagashima (Meiji University International Institute for Bio-Resource Research)

3S14-7

[11:10]

The genome editing technologies in marmoset for creating new primate modelsErika Sasaki^{1,2} (¹Dept. of App. Dev. Biol., Central Institute for Experimental Animals, ²Keio Advanced Research Center, Kio Univ.)

3S15

第15会場(神戸国際会議場3階 国際会議室)

9:00-11:30 [E]

Genetic/Epigenetic Regulation and Reconstitution In Vitro of Germ Cell DevelopmentOrganizers : Mitinori Saitou (Kyoto University)
Katsuhiko Hayashi (Kyushu University)

3S15-1

[9:00]

Stochasticity and hierarchy of spermatogenic stem cells

Shosei Yoshida (Natl. Inst. Basic Biology)

3S15-2

[9:30]

Sex Chromosomes and Mammalian Infertility

James MA Turner (Francis Crick Institute, Mill Hill Laboratory, London, UK)

3S15-3

[10:00]

Intrinsic and age-related sources of aneuploidy in eggs

Tomoya Kitajima (RIKEN CDB)

3S15-4

[10:30]

Reconstitution of mouse oogenesis in vitroKatsuhiko Hayashi¹, Orié Hikabe¹, Nobuhiko Hamazaki¹, Norio Hamada¹, Yasuyuki Ohkawa² (¹Dept. of Stem Cell Biol., Faculty of Med., Kyushu Univ., ²Dept. of Advanced Medical Initiatives, Faculty of Med., Kyushu Univ.)

3S15-5

[11:00]

Towards Understanding and Reconstitution In Vitro of Human Germ Cell DevelopmentMitinori Saitou^{1,2,3,4} (¹Dept. of Anat. Cell Biol., Grad. Sch. of Med., Kyoto Univ., ²JST, ERATO, ³iCeMS, Kyoto Univ., ⁴CIRA, Kyoto Univ.)

【第4日目12月4日(金)】
4S2 第2会場(神戸ポートピアホテル本館 地下1階 階案1) 9:00-11:30 [E]
The busy world of plant cells: dynamic organelle movements and their physiological roles

 Organizers : Ikuko Hara-Nishimura (Kyoto University)
 Kentaro Tamura (Kyoto University)

Introduction [9:00]

Kentaro Tamura (Kyoto University)

4S2-1 [9:05]
The Unique Nucleocytoplasmic Linkage in Plants

Kentaro Tamura (Dept. of Biol. Sci., Grad. Sch. of Sci., Kyoto Univ.)

4S2-2 [9:30]
A mystery of busy cytoplasmic streaming in quiet plants

Motoki Tominaga (Dep. Biol., Fac. Educ. Integrated Arts and Sci., Waseda Univ.)

4S2-3 [9:55]
Molecular dynamics in chloroplast photorelocation movement

 Samgeun Kong^{1,2} (¹Div. Struct. Biol. Med. Inst. of Bioreg. Kyushu Univ., ²Res. Cent. Live-Protein Dynamics, Kyushu Univ.)

4S2-4 [10:20]
Active movements and network formation of the endoplasmic reticulum in plant cells

 Haruko Ueda¹, Etsuo Yokota² (¹Grad. Sch. of Sci., Kyoto Univ., ²Grad. Sch. of Life Sci., Univ. of Hyogo)

4S2-5 [10:45]
Cortical microtubule patterning in xylem cells

 Yoshihisa Oda^{1,2}, Yoshinobu Nagashima^{1,3}, Yuki Sugiyama^{1,3}, Hiroo Fukuda³ (¹National Institute of Genetics, ²SOKEKENDAI, ³Dept. of Biol. Sci., Grad. Sch. of Sci., Univ. of Tokyo)

Discussion [11:10]
Conclusion [11:25]

Ikuko Hara-Nishimura (Kyoto University)

4S3 第3会場(神戸ポートピアホテル本館 地下1階 階案2) 9:00-11:30 [E]
Understanding of organogenesis beyond the hierarchy of multicellular behaviors

 Organizers : Akira Kikuchi (Osaka University)
 Mototsugu Eiraku (RIKEN)

Introduction [9:00]

Akira Kikuchi (Osaka University)

4S3-1 [9:01]
Spatial and Temporal Regulation of the Neural Tube Pattern Formation

Noriaki Sasai (Bio. Sci., NAIST)

4S3-2 [9:26]
Self-organized formation of complex tissues from stem cells

Mototsugu Eiraku (RIKEN CDB)

4S3-3 [9:50]
Identification of novel stem cells by the multicolor lineage tracing method

Hiroo Ueno (Dept. Stem Cell Pathology, Kansai Medical University)

4S3-4 [10:15]
Multiscale modeling and simulation to explore the role of mechanical forces that shape living tissues and organs

Taiji Adachi, Yasuhiro Inoue, Yoshitaka Kameo (Dept. of Biomech., Inst Frontier Med. Sci., Kyoto Univ.)



4S3-5

[10:40]

Fine-tuning of differentiation and morphogenesis of tubular organs by Wnt signaling

Akira Kikuchi, Shinsuke Fujii, Takayuki Kurimoto, Souji Ibuka, Shinji Matsumoto (Dept. of Molbio. Biochem., Grad. Sch. of Med., Osaka Univ.)

4S3-6

[11:04]

Kidney progenitor expansion and generation of vascularized glomeruli from stem cells

Ryuichi Nishinakamura, Shunsuke Tanigawa, Sazia Sharmin, Atsushi Taguchi (Inst. Mol. Embryol. Genet., Kumamoto Univ.)

Conclusion

[11:29]

Mototsugu Eiraku (RIKEN)

4S4

第4会場(神戸ポートピアホテル 本館地下1階 階差3)

9:00-11:30 [E]

New aspects of lipid biology unveiled by lipidomics –from bench to clinic–

Organizers : Hiroyuki Arai (The University of Tokyo)

Junken Aoki (Tohoku University)

4S4-1

[9:00]

Comprehensive lipidomics and Mass/LipidBank databasesMasanori Arita^{1,2}, Hiroshi Tsugawa² (¹Natl Instit Genet, ²RIKEN CSRS)

4S4-2

[9:23]

Single cell lipidomics approach for diseases

Mitsutoshi Setou (Dept. of Cell Biology and Anatomy, Hamamatsu Univ. Sch. of Medicine)

4S4-3

[9:46]

Measuring phosphoinositides at molecular species levelHiroki Nakanishi^{1,4}, Satoshi Eguchi², Masaki Ishikawa¹, Akira Suzuki³, Junko Sasaki², Takehiko Sasaki^{1,2,4} (¹Research Center for Biosignal, Akita University, ²Department of Medical Biology, Graduate School of Medicine, Akita University, ³Medical Institute of Bioregulation, Kyushu University, ⁴Akita Lipid Technologies, Inc.)

4S4-4

[10:09]

Function of organellar membrane lipids as a scaffold of intracellular signal integrationHiroyuki Arai^{1,2}, Tomohiko Taguchi² (¹Department of Health Chemistry, Graduate School of Pharmaceutical Sciences, University of Tokyo, ²Laboratory Pathological Cell Biology, Graduate School of Pharmaceutical Sciences, University of Tokyo)

4S4-5

[10:32]

Platelet-activating factor and eicosanoid regulation by LPCAT2Hideo Shindou^{1,2}, Takao Shimizu^{1,3} (¹NCGM Lipid Signal, ²JST CREST, ³Dept. of Lipid. Fac. of Med. Univ. of Tokyo)

4S4-6

[10:50]

Lipoquality regulation by the phospholipase A2 familyMakoto Murakami^{1,2} (¹Tokyo Metropolitan Institute of Medical Science, ²AMED-CREST)

4S4-7

[11:13]

LPA3 signal protects the heart against ischemic injury through activation of the vagus nerveKuniyuki Kano^{1,2}, Junken Aoki^{1,2} (¹Grad. Sch. of Pharm. Sci., Tohoku Univ., ²AMED)

4S14

第14会場(神戸国際会議場 1階 メインホール)

9:00-11:30 [E]

Maintenance and plasticity of epigenetic memory

Organizers : Yoichi Shinkai (RIKEN)

Jun-ichi Nakayama (Nagoya City University)

Introduction

[9:00]

Jun-ichi Nakayama (Nagoya City University)

| | |
|--|-----------------------|
| 4S14-1 | [9:05] |
| Epigenetic Inheritance Uncoupled from Sequence-Dependent Establishment | |
| Danesh Moazed (Harvard Medical School, HHMI) | |
| 4S14-2 | [9:30] |
| Crosstalk between histone modifications during heterochromatin assembly | |
| Jun-ichi Nakayama (Div. of Biol. Sci., Grad. Sch. of Nat. Sci., Nagoya City Univ.) | |
| 4S14-3 | [9:50] |
| Establishment and maintenance of histone modifications | |
| Bing Zhu (Institute of Biophysics, Chinese Academy of Sciences) | |
| 4S14-4 | [10:15] |
| Protracted NP95 binding to hemimethylated DNA disrupts proviral silencing | |
| Haruhiko Koseki, Jafar Sharif (RIKEN-IMS) | |
| 4S14-5 | [10:40] |
| A histone mimic within DNA Ligase 1 recruits UHRF1 to sites of DNA replication: implications for DNA remethylation | |
| Alexandra Fournier ¹ , Laure Ferry ¹ , Takeshi Tsusaka ² , Tadahiro Shimazu ² , Kyohei Arita ³ , Yoichi Shinkai ² , Pierre-Antoine Dofosse ¹ (¹ CNRS, Paris, France, ² RIKEN, Wako, Japan, ³ Yokohama City University) | |
| 4S14-6 | [11:00] |
| Epigenome changes induced by environmental factors and their memory | |
| Shunsuke Ishii (Lab of Molecular Genetics) | |
| Conclusion | [11:25] |
| Yoichi Shinkai (RIKEN) | |
| 4S15 | 9:00-11:30 [E] |
| 第15会場(神戸国際会議場3階 国際会議室) | |
| Tissue Remodeling and Diseases | |
| Organizers : Yoshihiro Ogawa (Tokyo Medical and Dental University) Motoko Yanagita (Kyoto University) | |
| Introduction | [9:00] |
| Yoshihiro Ogawa (Tokyo Medical and Dental University) | |
| 4S15-1 | [9:03] |
| Cellular and molecular bases of pulmonary fibrosis | |
| Kouji Matsushima (Dept. of Mol. Preventive Med., Faculty of Med., The Univ. of Tokyo) | |
| 4S15-2 | [9:32] |
| Intravital imaging analysis of different macrophages, bone tissue maintaining osteoclasts and residential macrophages in adipose tissues | |
| Masaru Ishii (Dept. of Immunol. Cell Biol., Grad. Sch. of Med. Front. Biosci., Osaka Univ.) | |
| 4S15-3 | [10:01] |
| Liver Tissue Injury and Remodeling | |
| Ekihiro Seki (Div. of Gastroenterol. Dept. of Med., Cedars-Sinai Med. Ctr.) | |
| 4S15-4 | [10:30] |
| Obesity-induced adipose tissue remodeling and the metabolic syndrome | |
| Takayoshi Suganami ^{1,2,3} , Miyako Tanaka ^{1,2} , Michiko Itoh ² , Yoshihiro Ogawa ^{2,4} (¹ Dept. of Molecular Medicine and Metabolism, Res. Inst. of Environmental Medicine, Nagoya Univ., ² Dept. of Molecular Endocrinology and Metabolism, Grad. Sch. of Medical and Dental Sci., Tokyo Medical and Dental Univ., ³ PRESTO, JST, ⁴ CREST・AMED) | |
| 4S15-5 | [10:59] |
| A brain-heart-kidney network controls adaptation to cardiac stress and remodeling through tissue macrophage activation | |
| Ichiro Manabe (Dept. Cardiovasc. Med., Grad. Sch. Med., Univ. Tokyo) | |

**Conclusion**

[11:28]

Motoko Yanagita (Kyoto University)

CSHA session

第9会場(神戸ポートピアホテル 本館 地下1階 菊水)

14:00-16:30 [E]

Metabolism, cancer and diseases

Organizer : Maoyen Chi (Cold Spring Harbor Laboratory/CSH Asia)

Introduction

[14:00]

Maoyen Chi (Cold Spring Harbor Laboratory/CSH Asia)

CSHA-1

[14:20]

The Mitochondrial Pyruvate Carrier as a Target for Treating Diabetes

Finck Brian (Washington University School of Medicine)

CSHA-2

[14:50]

The Role of Seipin in Adipogenesis and Lipid Droplet Expansion

(rob) yang Hongyuan (School of Biotechnology and Biomolecular Sciences, the University of NSW)

CSHA-3

[15:20]

A new method of drug delivery that selectively targets senescent cellsDaniel Munoz-Espin¹, Cristina Gimenez², Irene Galiana², Jose Ramon Murguia², Ramon Martinez-Manez², Manuel Serrano¹ (¹Spanish National Cancer Research Center (CNIO), 28029 Madrid, Spain, ²Centre for Molecular Recognition and Technological Development (IDM), Polytechnic University of Valencia (UPV), 46022 Valencia, Spain)**CSHA-4**

[15:50]

Adipose Tissue Dysregulation and Metabolic Complications in ObesityJong In Kim, Sung Sik Choe, Jin Young Huh, **Jae Bum Kim** (Department of Biological Science, Institute of Molecular Biology & Genetics, Seoul National University, Seoul 151-742, Korea)