The 41st Sapporo International Cancer Symposium Gancer Organolds: Domain Expansion

Date October 11 (Wed)–14 (Sat), 2023

KKR Hotel Tokyo, Japan

Organizer

Sapporo Cancer Seminar Foundation

Chair Persons

Toshiro Sato (Keio University) Masanobu Oshima (Kanazawa University) Hiroshi Seno (Kyoto University) Hans Clevers (Roche pRED)

Concurrently with

Ohno Moonshot International Cancer Symposium

Program & Abstract



Oct 11 (Wed)

14:00-14:15 Welcome Address

Masanori Hatakeyama, Shigeo Ohno and Toshiro Sato

14:15-15:39 Session 1. Cell Biology

Chair: Y. Fujita

S1-1 Role of cellular senescence in aging and cancer: relationship with microorganisms ...28 Eiji Hara

Department of Molecular Microbiology, Research Institute for Microbial Diseases, Osaka University, Osaka, Japan

NIDDK, National Institutes of Health, Bethesda, USA

S1-3 Epigenetic alteration of senescent stroma cells in the cancer microenvironment32 Akiko Takahashi

Division of Cellular Senescence, Cancer Institute, Japanese Foundation for Cancer Research, Tokyo, Japan Cancer Cell Communication Project, NEXT-Ganken Program, Japanese Foundation for Cancer Research, Tokyo, Japan

15:54-16:21 Session 2. Technology-1 Intravital Imaging

Chair: Y. Minami

16:21-16:48 Session 3. Technology-2 Developmental Biology

Chair: Y. Minami

Yan Fung Wong¹, Yatendra Kumar², Martin Proks¹, Jose R Herrera³, Michaela M Rothová¹, Rita S Monteiro¹, Sara Pozzi¹, Rachel E Jennings⁴, Neil A Hanley⁴, Wendy A Bickmore², Joshua M Brickman¹

¹ Univ. of Copenhagen, NNF Center for Stem Cell Medicine (reNEW), Denmark

- ² Univ. of Edinburgh, MRC Human Genetics Unit, United Kingdom
- ³ Univ. of Copenhagen, Center for Health Data Science, Denmark
- ⁴ Univ. of Manchester, Faculty of Biology, Medicine & Health, United Kingdom

16:48-17:43 Keynote Lecture

Chair: T. Sato

K1	Organoids to model human disease	20
	Hans Clevers	

Professor in Molecular Genetics, University of Utrecht, The Netherlands

9:30-1	0:49 Session4. Stomach Cancer
	Chair: SY. Leung
S4-1	Hiroyuki Aburatani
	Genome Science and Medicine Laboratory, Research Center for Advanced Science and Technology, The University of Tokyo, Tokyo, Japan
S4-2	Genetically engineered tumor-derived organoid models to examine the metastasis mechanism of gastrointestinal cancer
	Hiroko Oshima ^{1,2} , Sau Yee Kok ¹ , Mizuho Nakayama ^{1,2} , Yukinori Ikeda ³ , Yukiko T. Matsunaga ³ , <u>Masanobu Oshima^{1,2}</u>
	 ¹ Division of Genetics, Cancer Research Institute, Kanazawa University, Japan ² WPI-Nano Life Science Institute (NanoLSI), Kanazawa University, Japan ³ Institute of Industrial Science, The University of Tokyo, Japan
S4-3	progression in gastric cancer organoid models
	 April S Chan¹, Shui Wa Yun¹, Ho Sang Hui¹, Siu Tsan Yuen^{1,4}, Suet Yi Leung^{1,5}, and <u>Helen HN Yan¹</u> ¹ Department of Pathology, School of Clinical Medicine, The University of Hong Kong, Queen Mary Hospital, Pokfulam Hong Kong SAR, China ² Department of Surgery, School of Clinical Medicine, The University of Hong Kong, Queen Mary Hospital, Pokfulam, University Hong Kong, Queen Mary Hong Kong, Queen Ma
	 Hong Kong SAR, China ³ School of Biomedical Sciences, The University of Hong Kong, Pokfulam, Hong Kong SAR, China ⁴ Department of Pathology, St. Paul's Hospital, No. 2, Eastern Hospital Road, Causeway Bay, Hong Kong SAR, China ⁵ The Jockey Club Centre for Clinical Innovation and Discovery, LKS Faculty of Medicine, The University of Hong Kong, Pokfulam, Hong Kong SAR, China
	⁶ Centre for Oncology and Immunology, Hong Kong Science Park, Hong Kong SAR, China
11:04	-11:56 Session 5. Developmental Biology/Urology
	Chair: M. Morimoto
S5-1	Recapitulating ventral hindgut development in hiPSCs generates bladder organoids4
	Kazuhiro Ofuji, Filip J Wymeersch, <u>Minoru Takasato</u> RIKEN BDR, Kobe, Japan
S5-2	Human assembloids for understanding tissue regeneration and cancer
	¹ Institute of Molecular Biology and Genetics. Seoul National University. Seoul. Republic of Korea

¹ Institute of Molecular Biology and Genetics, Seoul National University, Seoul, Republic of Korea
 ² School of Biological Sciences, Seoul National University, Seoul, Republic of Korea

11:56-12:56 Luncheon Seminar 1

Chair: T. Sato

Co-Sponsored: VERITAS Corporation

LS1 In Vitro Tissue Modeling Innovations: Hepatic, Alveolar and Intestinal Organoids118 Ryan K. Conder

STEMCELL Technologies, Vancouver, Canada Simon Fraser University, Department of Molecular Biology and Biochemistry, Burnaby, BC V5A 1S6, Canada

SICS2023

12:56	5-13:56	Poster Session
		Chair: Y. Kabe, T. Katagiri, O. Nagano and S. Ohsawa
P1		lar stress induces non-canonical activation of EphA2 through the p38-MK2-RSK ling pathway
	<u>Yue Z</u> Satoru	Z hou , Ryota Oki, Akihiro Tanaka, Leixin Song, Atsushi Takashima, Naru Hamada, 1 Yokoyama, Hiroaki Sakurai
	Departr	nent of Cancer Cell Biology, Faculty of Pharmaceutical Sciences, University of Toyama, Toyama, Japan
P2		ion-canonical activation of receptor tyrosine kinase EphA2 promotes cell
		ity in TGF-β-treated mesenchymal cancer cells 95 <u>a Song</u> , Yue Zhou, Tomohiro Yamamura, Satoru Yokoyama, Hiroaki Sakurai
		nent of Cancer Cell Biology, Faculty of Pharmaceutical Sciences, University of Toyama, Toyama, Japan
P3	pancı	<i>OV</i> overexpression induced by its promoter demethylation contributes to reatic cancer progression via the activation of folate cycle/c-Myc/mTORC1
	<u>Shoic</u>	Nay
	¹ Depar	rtment of Medical Genome Sciences, Research Institute for Frontier Medicine, Sapporo Medical University School
	² Depar ³ Divisi	edicine, Japan tment of Gastroenterology and Hepatology, Sapporo Medical University School of Medicine, Japan ion of Tumor Cell Biology and Bioimaging, Cancer Research Institute, Kanazawa University, Japan Cancer Center Research Institute, Japan
P4	Mole	cular pathology of uterine leiomyosarcoma for development of diagnostic
	meth Taku	od and clinical treatment
	 ¹ Cance ² Medic ³ Dept. ⁴ Massa ⁵ Gynec 	ar Medicine, National Hospital Organization Kyoto Medical Center, Kyoto, Japan cal R&D Promotion Project, The Japan Agency for Medical Research and Development (AMED), Tokyo, Japan of Pathology, Shinshu University Hospital, Nagano, Japan ichusetts Institute of Technology, Picower Institution, MA, USA cology, Sendai Red Cross Hospital, Miyagi, Japan
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	Etsuk	aka Nakano ¹ , Shigeto Kawai ¹ , Takanori Fujita ² , Mimori Yamada ¹ , Genta Nagae ² , o Fujii ¹ , Hiroyuki Aburatani ²
	 ¹ Trans ² Genor Japan 	lational Research Division, Chugai Pharmaceutical Co., Ltd., Tokyo, Japan me Science Division, Research Center for Advanced Science and Technology, The University of Tokyo, Tokyo,
P6		ient-derived lung cancer organoid library reveals targetable Wnt dependency in
		adenocarcinoma
		<u>D</u> Hamamoto¹ , Toshiki Ebisudani ² , Kazuhiro Togasaki ^{2,3} , Akifumi Mitsuishi ¹ , Kai Sugihara ¹ ,
		Shinozaki ¹ , Takahiro Fukushima ¹ , Kenta Kawasaki ¹ , Takashi Seino ¹ , Mayumi Oda ¹ , u Hanyu ¹ , Kohta Toshimitsu ¹ , Katsura Emoto ⁴ , Yuichiro Hayashi ⁴ , Keisuke Asakura ⁵ ,
		A Johnson ⁶ , Hideki Terai ¹ , Shinnosuke Ikemur ¹ , Ichiro Kawada ¹ , Makoto Ishii ¹ ,
		yuki Hishida ⁵ , Hisao Asamura ⁵ , Kenzo Soejima ¹ , Hidewaki Nakagawa ⁶ , Masayuki Fujii ² ,
		i Fukunaga ¹ , Hiroyuki Yasuda ⁷ , Toshiro Sato ⁸
	 ² Depar ³ Depar ⁴ Divisi 	tment of Pulmonary Medicine, Keio University, School of Medicine, Tokyo, Japan tment of Integrative Medicine and Biochemistry, Keio University School of Medicine, Tokyo, Japan tment of Gastroenterology, Keio University, School of Medicine, Tokyo, Japan on of Diagnostic Pathology, Keio University School of Medicine, Tokyo, Japan
	⁶ Labor ⁷ Depar	on of Thoracic Surgery, Keio University School of Medicine, Tokyo, Japan atory for Cancer Genomics, RIKEN Center for Integrative Medical Sciences, Yokohama, Japan tment of Pulmonary Medicine, Keio University School of Medicine, Tokyo, Japan tment of Integrative Medicine and Biochemistry, Keio University School of Medicine, Tokyo, Japan
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Hiroyuki Aburatani1

¹ Divition of Genome Science & Medicine, RCAST, The University of Tokyo, Japan
 ² Department of Organoid Medicine, Sakaguchi Laboratory, Keio University School of Medicine, Tokyo, Japan
 ³ Department of Gastroenterology, Keio University School of Medicine, Tokyo, Japan

P8	Patient-derived organoids of pancreatic ductal adenocarcinoma for subtype determination and clinical outcome prediction
P9	The functional role of Kras, p53, Wnt and Notch pathways in the tumorigenesis of extrahepatic biliary system
	<u>Munemasa Nagao</u> ¹ , Mio Namikawa ² , Yoko Masui ¹ , Chen Jiayu ¹ , Munehiro Ikeda ¹ , Sho Matsuyama ¹ , Kei Iimori ¹ , Shinnosuke Nakayama ¹ , Naoki Aoyama ¹ , Kenta Mizukoshi ¹ , Go Yamakawa ¹ , Keiske Iwane ¹ , Munenori Kawai ¹ , Mayuki Omatsu ¹ , Tomonori Masuda ¹ , Makoto Sono ¹ , Yukiko Hiramatsu ¹ , Takahisa Maruno ¹ , Yuki Nakanishi ¹ , Akihisa Fukuda ¹ , Hiroshi Seno ¹ ¹ Department of Gastroenterology and Hepatology, Kyoto University Graduate School of Medicine, Kyoto, Japan ² Department of Gastroenterology and Hepatology, Japan Baptist Hospital, Kyoto, Japan
P10	Polyploidy determines a characteristic subset of hepatocellular with aggressive
	features
	¹ Department of Molecular Microbiology, Research Institute for Microbial Diseases, Osaka University, Osaka, Japan ² Division of gastroenterology, Department of Internal Medicine, Kobe University Graduate School of Medicine, Kobe, Japan
P11	Characterization of heterogenous cancer-associated fibroblasts in human pancreatic cancers
	Tomonori Matsumoto ¹ , Yoshiyuki Harada ^{1,2} , Takanori Matsuura ^{1,2} , Astuhiro Masuda ² , Yuzo Kodama ² , Eiji Hara ¹
	¹ Department of Molecular Microbiology, Research Institute for Microbial Diseases, Osaka University, Osaka, Japan ² Division of gastroenterology, Department of Internal Medicine, Kobe University Graduate School of Medicine, Kobe, Japan
P12	Identification and characterization of genes associated with chemoresistance- in refractory pancreatic cancers
	 <u>Yosuke Matsushita</u>^{1,2}, Tetsuro Yoshimaru², Toyomasa Katagiri^{1,2} ¹ Laboratory of Biofunctional Molecular Medicine, Center for Drug Design Research, National Institutes of Biomedical Innovation, Health and Nutrition, Osaka, Japan ² Division of Genome Medicine, Institute of Advanced Medical Science, Tokushima University, Tokushima, Japan
P13	A novel molecular mechanism of evasion of apoptotic cell death regulated by
	S1P-atypical PKC signaling
P14	Elucidation of the molecular mechanism of a tumor-suppressive cell competition triggered by a "kick-me-out" signal, FGF21107
	Motoyuki Ogawa, Mina Yano, Isao Naguro, Hidenori Ichijo
	Cell Signaling, Graduate School of Pharmaceutical Sciences, The University of Tokyo, Tokyo, Japan
P15	Rif promotes progression of lung adenocarcinoma by regulating Wnt5a-Ror1 signaling
	Koki Kamizaki ¹ , Michiru Nishita ² , Yasuhiro Minami ¹
	 ¹ Division of Cell Physiology, Department of Physiology and Cell Biology, Kobe University, Graduate School of Medicine, Kobe, Japan ² Department of Biochemistry, Fukushima Medical University School of Medicine, Fukushima, Japan
P16	Graduate School of Medicine, Kobe, Japan

P17	Ror2-Nrf2 signaling confers ferroptosis resistance in glioblastoma cells
	¹ Department of Physiology and Cell Biology, Graduate School of Medicine, Kobe University, Kobe, Japan ² Department of Neurosurgery, Graduate School of Medicine, Kobe University, Kobe, Japan
P18	Deciphering PDX and Organoids in pancreatic cancer research arena
	 ⁴ Department of Diagnostic Pathology, Kobe University Graduate School of Medicine, Kobe, Japan ⁵ Division of Gastroenterology, Department of Internal Medicine, Graduate School of Medicine, Kobe University, Kobe, Hyogo, Japan ⁶ Department of Gastroenterology and Hepatology, Kyoto University Graduate School of Medicine, Kyoto, Japan
D 4 0	
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	Yoshiki Yamamoto ¹ , Makoto Nakagawa ^{2,3} , John Glushka ⁴ , Ayako Maeno ⁵ , Masayuki Fukuda ⁶ , Hironori Kaji ⁵ , Junya Toguchida ⁵ , Arthur S. Edison ⁴ , Fumihiko Nakatani ⁷ , Benjamin Alman ³ , Takahiro Ito ¹ , Ayuna Hattori ¹
	 ¹ Inst. for Life and Med. Sci., Kyoto Univ., Kyoto, Japan ² Dept. of Orthopaedic Surg., Grad. Sch. of Med. Sci., Kyushu Univ., Fukuoka, Japan ³ Dept. of Orthopaedic Surg., Duke Univ., NC, U.S. ⁴ Complex Carbohydrate Res. Ctr., UGA, Georgia, U.S.
	 ⁵ Inst. for Chem. Res., Kyoto Univ., Kyoto, Japan ⁶ Center for iPS Cell Research and Application, Kyoto Univ., Kyoto, Japan ⁷ Dept. of Musculoskeletal Oncology and Rehabilitation, NCCHC, Kashiwa, Japan
P20	PKCλ involves to the regulation for asymmetric cell division of pancreatic cancer stem cells
P20	PKCλ involves to the regulation for asymmetric cell division of pancreatic cancer stem cells
P20	stem cells
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P20 P21	stem cells
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	stem cells 113 <u>Takahiro Kasai</u> ¹ , Shoma Tamori ¹ , Yuta Takasaki ¹ , Kazuori Sasaki ² , Shigeo Ohno ² 113 and Kazunori Akimoto ¹ 1 ¹ Department of Medicinal and Life Sciences, Faculty of Pharmaceutical Sciences, Tokyo University of Science, Chiba, Japan 1 ² Laboratory of Cancer Biology, Institute for Diseases of Old Age, Juntendo University School of Medicine, Tokyo, Japan 1 Single-cell patterning of multiple types of cells using photo-activatable PEG-lipid for high-throughput analysis of cell-cell interaction 114
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P21	 stem cells

13:56-15:52 Session 6. Airway-Lung Organoids

Chair: D. Gao

S6-1	Scrap and reconstruction of lung fibrosis using alveolar organoid
S6-2	Understanding lung cancer heterogeneity using patient-derived organoids
S6-3	Inflammatory signals link cellular reprogramming to adeno-to-squamous transdifferentiation and therapeutic resistance in <i>LKB1</i> -deficient <i>KRAS</i> -mutant lung cancer
S6-4	Development of microfluidic blood exchange as a next-generation parabiosis for tumor/microbiota immunology

16:07-16:59 Session 7. Organoid Biobank

Chair: M. Oshima

<u>Hee Seung Lee^{1,2}</u>, Dai Hoon Han^{2,3}, Kyungjoo Cho¹, Soo Been Park¹, Chanyang Kim¹, Galam Leem¹, Dawoon E. Jung^{1,2}, Soon Sung Kwon⁴, Chul Hoon Kim⁴, Jung Hyun Jo^{1,2}, Hye Won Lee^{1,2}, Si Young Song^{1,2} and Jun Yong Park^{1,2}

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Department of Integrative Medicine and Biochemistry, Keio University School of Medicine, Tokyo, Japan

16:59-17:45 Special Lecture 1

Chair: M. Oshima

Oct 13 (Fri)

	0:42 Session 8. SU2C
	Chair: C. J. Kuo
S8-1	Harness connections between the microbiome and disease to improve human health
	Laboratory for Gut Homeostasis, RIKEN Center for Integrative Medical Sciences (IMS), Yokohama, Japan
S8-2	Progressive plasticity during colorectal cancer metastasis
10:57-	11:49 Session 9. SU2C
	Chair: E. Hara
S9-1 S9-2	Modeling gut-microbiota interactions in colorectal cancer using organoid-bacteria co-cultures
55 L	Toshiro Sato Department of Integrative Medicine and Biochemistry, Keio University School of Medicine, Tokyo, Japan
11:49-	
	12:49 Luncheon Seminar 2
	12:49 Luncheon Seminar 2 Chair: M. Fujii Co-Sponsored: Medical & Biological Laboratories Co., Ltd.
	Chair: M. Fujii Co-Sponsored: Medical & Biological Laboratories Co., Ltd. Fetal-like reprogramming is the key to understand the heterogeneity of colorectal
LS2 12:49-	Chair: M. Fujii Co-Sponsored: Medical & Biological Laboratories Co., Ltd. Fetal-like reprogramming is the key to understand the heterogeneity of colorectal cancer

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13:15-14:12 Session 11. Technology-4 Mathmatic Biology

Chair: H. Ichijo

S11-1 Language models of regulation for	r cancer genetics70
Raul Rabadan	

Departments of Systems Biology and Biomedical Informatics, Mathematical Genomics Program, Columbia University

Hiroyuki Kubota

Division of Integrated Omics, Medical Research Center for High Depth Omics, Medical Institute of Bioregulation, Kyushu University, Fukuoka, Japan

14:12-15:08 Session 12. Pancreas Cancer 1

Chair: BK Koo

Masahiro Tsujimae, Atsuhiro Masuda, Yuzo Kodama

Division of Gastroenterology, Department of Internal Medicine, Kobe University Graduate School of Medicine, Hyogo, Japan

S12-2 Integrated profiling of human pancreatic cancer organoid biobank76

Yunguang Li¹, Shijie Tang¹, Huan Wang², Hongwen Zhu³, Yurun Lu⁴, Yehan Zhang¹, Yong Wang⁴, Luonan Chen¹, Hu Zhou³, Gang Jin², **Dong Gao**¹

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- ⁴ National Center for Mathematics and Interdisciplinary Sciences, Chinese Academy of Sciences, Beijing 100080, China

15:23-17:12 Session 13. Pancreas Cancer 2

Chair: T. Imai

Department of Gastroenterology and Hepatology, Kyoto University Graduate School of Medicine, Kyoto, Japan

Toby C Cornish⁵, Yuchen Jiao⁶, Rachel Karchin^{4,7}, Ralph H Hruban^{1,4}, Pei-Hsun Wu³, Denis Wirtz^{1,3,4}, **Laura D. Wood**^{1,4}

² Department of Comparative Medicine, Medical University of South Carolina, Charleston, SC

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³ Department of Chemical and Biomolecular Engineering, Johns Hopkins University, Baltimore, MD

⁴ Sidney Kimmel Comprehensive Cancer Center, Johns Hopkins University School of Medicine, Baltimore, MD

⁵ Department of Pathology, University of Colorado School of Medicine, Aurora, CO

Cancer Hospital, Chinese Academy of Medical Sciences, and Peking Union Medical College, Beijing, China ⁷ Institute for Computational Medicine, Johns Hopkins University, Baltimore, MD

S13-3 Genetic analysis of pancreatic ductal epithelium	82
Tomonori Hirano ¹ , Nobuyuki Kakiuchi ² , Seishi Ogawa ¹	
¹ Department of Pathology and Tumor Biology, Graduate School of Medicine, Kyoto University, Kyoto, Japan	

² The Hakubi Center for Advanced Research, Kyoto University

Miho Sekai, Yasuyuki Fujita

Department of Molecular Oncology, Kyoto University, Graduate School of Medicine, Kyoto, Japan

17:22-18:02 Special Lecture 2

Chair: H. Seno

Laboratory of Cancer Biology and Genetics, Center for Cancer Research, National Cancer Institute, National Institutes of Health, Bethesda, MD, USA

9:00-9:59 Session14. Technology-5 Gene-engineering

Chair: Y. Miroshnikova

S14-1 Acquired epithelial WNT secretion drives niche independence of developing gastric

Amanda Andersson-Rolf¹, Stephan R. Jahn³, Anne-Marlen Ada³, Sang-Min Kim⁴, Joo Yeon Lim⁵, Tim Schmäche³, Nancy Wetterling³, Saskia Stegert³, Ji-Yeon Park⁶, Jae-Ho Cheong⁵, Hyunki Kim⁴, Daniel E. Stange^{3,7}, **Bon-Kyoung Koo**^{1,8}

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- ⁸ Center for Genome Engineering, Institute of Basic Sciences, Daejeon, Republic of Korea

Department of Molecular and Cellular Biology, Medical Institute of Bioregulation, Kyushu University, Fukuoka, Japan

9:59-10:24 Session 15. Breast Cancer

Chair: Y. Miroshnikova

Division of Cancer Cell Biology, Cancer Research Institute, Kanazawa University, Kanazawa city, Japan

10:39-11:06 Session 16. Technology-6 Micro-engineering

Chair: K. Ganesh

Department of Micro Engineering, Kyoto University, Kyoto, Japan

11:06-11:46 Special Lecture 3

Chair: K. Ganesh

Department of Medicine, Stanford University School of Medicine, USA

11:46-11:56 Closing Remarks

Masanobu Oshima