

# Day 1

September 30 (Thursday)

CS1

## Therapeutic resistance of cancer stem cells

がん幹細胞の治療抵抗性

Chairpersons: Koichi Akashi (Department of Medicine and Biosystemic Sciences, Kyushu University)  
Osamu Nagano (Gene Regulation, IAMR, Keio Univ. Sch. Med.)

座長：赤司 浩一 (九州大・病態修復内科)  
永野 修 (慶應大・医・先端研・遺伝子制御)

Cancer stem cells (CSCs), the tumor cell subpopulation within the heterogeneous tumors, exhibit an ability to recapitulate the morphological and genetic features of the original tumor when they are transplanted into the immune-deficient mice. Since the discovery of leukemia stem cells in 1994, the subpopulation of tumor cells that possess the characteristics associated with normal stem cells, have also been identified in various type of cancers. Increasing evidence indicates that the unique characteristics of CSCs including the quiescence/slow proliferation, the enhanced self-renewal, the metabolic alteration, and the resistance to oxidative stress contribute to therapeutic resistance. Therefore, understanding the biological characteristics leading to therapeutic resistance in CSCs is required to develop the effective cancer treatment. In this symposium, we will focus on the mechanisms associated with the therapeutic resistance of CSCs and we would like to discuss new strategies proposed based on advanced cancer stem cell research.

## CS1-1 Therapeutic targeting of redox system in cancer stem cells

Osamu Nagano, Hideyuki Saya (Gene Regulation, IAMR, Keio Univ. Sch. Med.)

がん幹細胞のレドックス制御機構を標的としたがん治療法の開発  
永野 修、佐谷 秀行 (慶應大・医・先端研・遺伝子制御)

## CS1-2 Identification of the enhanced lipid metabolism pathway in leukemic stem cells

Yoshikane Kikushige<sup>1,2</sup>, Akashi Koichi<sup>1</sup> (1Center for Cellular and Molecular Medicine, Kyushu University Hospital, 2Department of Medicine and Biosystemic Sciences, Kyushu University)

ヒト白血病幹細胞が依存する脂質代謝経路の同定  
菊繁 吉謙<sup>1,2</sup>、赤司 浩一<sup>2</sup> (1九州大・病院・遺伝子細胞療法部、2九州大・病態修復内科)

## CS1-3 Key molecular targets in cancer stem-like cells in triple-negative breast cancer

Noriko Gotoh (Div. Cancer Cell Biol., Cancer Res. Inst., Kanazawa Univ.)

トリプルネガティブタイプ乳がん幹細胞の鍵となる分子標的  
後藤 典子 (金沢大・がん研・分子病態)

## CS1-4 The role of a slow-cycling cancer stem cell in cancer chemoresistance

Koji Okamoto (Div. Cancer Differentiation, Natl. Cancer Ctr. Res. Inst.)

抗がん剤抵抗性を示す休止型がん幹細胞の解析と治療戦略  
岡本 康司 (国立がん研セ・研・がん分化制御)

## CS1-5 Clinical and Therapeutic Implications of Cancer Stem Cells

Michael F. Clarke (Stanford Institute for Stem Cell Biology and Regenerative Medicine)

S1

## Forefront research on chromatin dynamics and its application to cancer medicine

クロマチン動態研究の最前線とがん医療への応用

Chairpersons: Hiroyuki Seimiya (Div. Mol. Biother., Cancer Chemother. Ctr., JFCR)  
Makoto Nakanishi (Div. Cancer Cell Biol., Inst. of Med. Sci., Univ. of Tokyo)

座長：清宮 啓之 (公財) がん研・化療セ・分子生物治療)  
中西 真 (東京大・医科研・癌防御シグナル分野)

Proper chromatin dynamics is a prerequisite for the robust and sophisticated machineries of genome network. Its abnormalities not only drive cancer but also provide therapeutic opportunities. For example, epigenetic dysregulation is closely associated with cancer, and various small molecules that inhibit DNA/histone chemical modifications have been clinically approved. Synthetic lethal therapies have been also proposed for cancer with aberrant chromatin dynamics. Furthermore, advance in this research filed is supported by ever-evolving cancer biology with brand-new concepts, targets and technologies. In this symposium, we will discuss cutting-edge topics, including fine molecular mechanisms and predictive biomarkers for chromatin dynamics-targeted drugs (Nishiyama, Murai, Seimiya), synthetic lethality in chromatin remodeling factor-deficient cancer (Ogiwara), biomolecular condensates in genome network (Suzuki), telomere deprotection in mitosis (Hayashi), and oncovirus-induced aberrations of chromatin structures (Okabe). We welcome diverse researchers, including basic, applied and clinical scientists both from academia and industry, and of course, young students. Please join us!

## S1-1 Molecular mechanism of DNMT1-DNA cross-link repair

Atsuya Nishiyama<sup>1</sup>, Akinori Endoh<sup>2</sup>, Yosie Chiba<sup>1</sup>, Chieko Konishi<sup>1</sup>, Ayane Kaketani<sup>1</sup>, Tomomi Nagatani<sup>1</sup>, Yasushi Sacki<sup>3</sup>, Makoto Nakanishi<sup>1</sup> (1Div. Cancer Cell Biol., IMSUT, 2Lab. Protein Metab., TMiMS)

## DNMT1-DNA 架橋修復の分子機構

西山 敦哉<sup>1</sup>、遠藤 彬則<sup>2</sup>、千葉 祥恵<sup>1</sup>、小西 知江子<sup>1</sup>、掛谷 文音<sup>1</sup>、永谷 智実<sup>1</sup>、佐伯 泰<sup>2</sup>、中西 真<sup>1</sup> (1東京大・医科研・癌防御シグナル分野、2都医総研・蛋白質代謝)

## S1-2 Abnormalities in Chromatin Remodeling Factors and Synthetic Lethality

Hideaki Ogiwara (Div. Canc. Ther. Nati. Canc. Ctr. Res. Inst.)

クロマチンリモデリング因子の異常と合成致死性  
荻原 秀明 (国立がん研セ・研・がん治療学)

## S1-3 Biomolecular Condensates and Genome Network in Cancer

Hiroshi I. Suzuki (Div. Mol. Oncol., Nagoya Univ., Grad. Sch. Med.)

がんにおける生体分子凝縮体とゲノムネットワーク  
鈴木 洋 (名古屋大・医・分子腫瘍学)

## S1-4 SLFN11 enhances chromatin accessibility in response to DNA-targeting anti-cancer agents

Junko Murai (Inst. for Advanced BioSci., Keio Univ.)

SLFN 11 は DNA 標的型抗がん剤投与でクロマチンを開かせる  
村井 純子 (慶應大・先端生命科学研)

## S1-5 Targeting G-quadruplex nucleic acids for cancer therapeutics

Hiroyuki Seimiya (Div. Mol. Biother., Cancer Chemother. Ctr., JFCR)

Gアニン四重鎖核酸のターゲティングによるがん治療  
清宮 啓之 (公財) がん研・化療セ・分子生物治療)

## S1-6 The Mechanism of Mitotic Telomere Deprotection

Makoto T. Hayashi<sup>1,2</sup>, Diana Romero<sup>2,3</sup>, Fuyuki Ishikawa<sup>3</sup> (1IFOM, Italy, 2The Grad. Sch. of Med., Kyoto Univ., 3The Grad. Sch. of Biostudies, Kyoto Univ.)

## M 期テロメア脱保護の分子機構解析

林 眞理<sup>1,2</sup>、Diana Romero<sup>2,3</sup>、石川 冬木<sup>3</sup> (1イタリア分子腫瘍研、2京都大・院医、3京都大・院生命)

## S1-7 Tissue-wide analysis of chromatin structural aberrations induced by oncovirus infection

Atsushi Okabe<sup>1</sup>, Takahiro Fujii<sup>1,2</sup>, Harue Mizokami<sup>1</sup>, Masaki Fukuyo<sup>1</sup>, Keisuke Matsusaka<sup>1</sup>, Bahityar Rahmutulla<sup>1</sup>, Patrick Tan<sup>3</sup>, Atsushi Kaneda<sup>1</sup> (1Dept. Mol. Oncology, Grad. Sch. Of Med., Chiba Univ., 2Sch. Med., Chiba Univ., 3Cancer Sci. Inst. of Singapore)

## 癌ウイルス感染が誘導するクロマチン構造異常の臓器横断的解析

岡部 篤史<sup>1</sup>、藤井 貴大<sup>1,2</sup>、溝上 晴恵<sup>1</sup>、福世 真樹<sup>1</sup>、松坂 恵介<sup>1</sup>、Bahityar Rahmutulla<sup>1</sup>、Patrick Tan<sup>3</sup>、金田 篤志<sup>1</sup> (1千葉大・院医・分子腫瘍学、2千葉大医、3Cancer Sci. Inst. of Singapore)

SST1 New trend of development for gastrointestinal cancer 消化管がんを対象とする新たな治療開発の方向性

Chairpersons: Toshihiko Doi (Natl. Cancer Ctr. Hosp. East) Takatsugu Ishimoto (Dept. Gastroenterological Surg., Grad. Sch. of Med. Sci., Kumamoto Univ.)

座長：土井 俊彦 (国立がん研セ・東病院) 石本 崇胤 (熊本大・院・消化器外科学)

In comparison with lung, breast etc, the success rate of new drug is still limited in GI tract cancer. The main reasons are due to heterogeneity and diversity of cancers. Recent technological advances and the accumulation of clinical data are moving toward the use of precision medicine in GI cancer. Although the genomic aberration of GI cancer is apparently less actionable compared to other solid tumors, novel informative analyses derived from comprehensive gene profiling may lead to the discovery of precise molecular targeted drugs. These progressions will make it feasible to incorporate clinical, genome-based, and phenotype-based diagnostic and therapeutic approaches and apply them to individual GI cancer patients for precision medicine. We will need more promising new modalities. To overcome, new insights into biological mechanisms of cancers have translated into novel therapeutics, including immune checkpoint inhibitors, new small molecules, new generation armed antibodies etc which have become a treatment option for select patients. At present, we are in the very early phases of this transition towards new world. In this session, we share the "new" in GI cancers from several opinion leaders. This session can be a guide for clinical and bench investigators to further develop new breakthrough medicine.

SST1-1 Clinical adaptation of immune-checkpoint inhibitor for esophageal cancer Ken Kato (Dept. Head & Neck, Esophageal Med. Oncol, NCCH)

食道がんにおける免疫チェックポイント阻害剤の臨床 加藤 健 (国立がん研セ・中央病院・頭頸部内科)

SST1-2 Drug development for Her2 positive gastrointestinal cancer : Focus on clinical development of antigen drug conjugate. Kensei Yamaguchi, Akira Ooki, Takeru Wakatsuki, Daisuke Takahari, Hiroki Oosumi, Izuma Nakayama, Mariko Ogura, Eiji Shinozaki, Keisho Chin (Dept. Gastroenterological Chemotherapy, Cancer Inst. Hosp. of JFCR)

Her2 陽性消化器癌の治療開発 ADC を中心に 山口 研成、大木 暁、若槻 尊、高張 大亮、大隅 寛木、中山 巖馬、小倉 真理子、篠崎 英司、陳 勁松 ((公財)がん研・有明病院・消化器化学療法科)

SST1-3 Precision medicine in colorectal cancer: current status and future directions Hiroya Taniguchi (Dept. Clin. Oncology, Aichi Cancer Ctr. Hosp.)

大腸がん個別化治療の現状と展望 谷口 浩也 (愛知県がんセ・薬物療法部)

SST1-4 Innovation of new endoscopic treatments for gastrointestinal cancer Tomonori Yano, Yusuke Yoda, Tomohiro Kadota, Hironori Sunakawa, Takashi Kojima, Kohei Shitara, Toshihiko Doi (Dept. Gastroenterology & Endoscopy, Natl. Cancer Ctr. Hosp. East, Dept. Gastrointestinal Oncology, Natl. Cancer Ctr. Hosp. East, Dept. Exp. Therap., Natl. Cancer Ctr. Hosp. East)

消化管がんに対する新しい内視鏡治療の開発 矢野 友規、依田 雄介、門田 智裕、砂川 弘憲、小島 隆嗣、設樂 統平、土井 俊彦 (国立がん研セ・東病院・消化管内視鏡科、消化管内科、先端医療科)

SST1-5 Development of new therapies targeting inflammation and immunity in colorectal cancer Koji Taniguchi (Dept. Pathol., Fac. of Med., Hokkaido Univ.)

大腸がんの炎症・免疫を標的とした治療開発 谷口 浩二 (北海道大・医・分子病理)

SST1-6 A new strategy for treating peritoneal dissemination of gastrointestinal cancer Hiroki Ozawa, Hiroshi Imazeki, Hirofumi Kawakubo, Kazumasa Fukuda, Yuko Kitagawa, Chie Kudo (Dept. Immune Med., Natl. Cancer Ctr. Res. Inst., Dept. Surg., Keio Univ. Sch. of Med.)

胃がん腹腔播種に対する新たな分子標的複合療法の開発 小澤 広輝、今関 洋、川久保 博文、福田 和正、北川 雄光、工藤 千恵 (国立がん研セ・研・免疫創薬部門、慶應大・医・外科学教室)

SST1-7 HER2 targeted alpha therapy against metastasis of gastric cancer Huizi K. Li, Sumitaka Hasegawa (Radiation & Cancer Biol. Group, QST)

胃がんの転移に対する HER2 標的アルファ線治療 李 惠子、長谷川 純崇 (量研・放射線がん生物学研究グループ)

SST1-8 Genomic profiling of ascites cells for gastric adenocarcinoma with peritoneal carcinomatosis Kazuto Harada, Masaaki Iwatsuki, Kohei Yamashita, Yoshifumi Baba, Yuji Miyamoto, Jaffer Ajani, Hideo Baba (Dept. Gastroenterological Surg., Kumamoto Univ., Gastrointestinal Med. Oncology, M. D. Anderson Cancer Ctr.)

新規治療開発を目指した胃癌腹膜播種の腹水細胞の網羅的ゲノム解析 原田 和人、若槻 政晃、山下 晃平、馬場 祥史、宮本 裕士、アジャニ ジェファー、馬場 秀夫 (熊本大・院・消化器外科学、MDアンダーソン癌センター)

IS1 Extracellular vesicle-mediated cross-talk in cancer エクソソームを介したがんのクロストーク

Chairpersons: Takahiro Ochiya (Dept. Mol. & Cell. Med., Inst. of Med. Sci., Tokyo Med. Univ.) Tang-Long Shen (Dept. of Internal Med., National Taiwan Univ. Hosp.)

座長：落谷 孝広 (東京医大・医総研・分子細胞治療) Tang-Long Shen (Dept. of Internal Med., National Taiwan Univ. Hosp.)

In the past several years, the importance of microRNA (miRNA) in cancer cells has been recognized. Dysregulation of miRNAs leads to the cancer development, meaning that expression profile of miRNAs can be used as cancer biomarker. Currently, the contribution of extracellular vesicles (EVs) and their circulating miRNAs to cancer development is widely documented, and they hold promise for use in new methods for diagnosing cancer and monitoring cancer development. Therapeutic targeting of molecules involved in EV production and secretion from cancer cells may prevent or delay cancer recurrence. These therapeutic strategies will prevent the delivery of EVs from cancer cells to microenvironmental cells, leading to the development of a novel anticancer drugs. In this IS, the presenters will focus on EV-mediated cross-talk in cancer cells and surrounding immune cells and stromal cells. Furthermore, we will discuss EV-based novel technology for cancer therapy by using EVs as a novel drug delivery system as well as anti-cancer virus system.

IS1-1 Extracellular vesicles in cancer: current status and challenges Tang-Long Shen, Li-Chun Chang, Yi-Chiung Hsu, Han-Mo Chiu, Koji Ueda, Ming-Shiang Wu, Chiun-How Kao, Yu-Ling Tai (National Taiwan University, Dept. of Internal Med., National Taiwan Univ. Hosp., Dept. of Biomed. Sci. and Engineering, National Central Univ., Cancer Precision Med. Ctr., Japanese Foundation of Cancer Res., Dept. of Statistics, Tamkang Univ.)

IS1-2 Particle Characteristics of Activated CD8+ T Cell EVs with the Capacity to Deplete Tumoral Mesenchymal Cells Naohiro Seo, Junko Nakamura, Tsuguhiko Kaneda, Kazunari Akiyoshi, Hiroshi Shiku (Dept. Personalized Cancer Immunother., Mie Univ., Grad., Sch. Med., JST CREST, Dept. Polymer Sci., Kyoto Univ. Sch. Engineering)

がん間質の間葉系細胞傷害能を有する活性化 CD8+T 細胞由来細胞外小胞の粒子特性 瀬尾 尚宏、中村 純子、金田 次弘、秋吉 一成、珠玖 洋 (三重大・医・個別化がん、JST CREST、京都大・工・高分子化学)

IS1-3 The clinical application of extracellular vesicles for prostate cancer management Fumihiko Urabe, Kagenori Ito, Yusuke Yamamoto, Takahiro Kimura, Shin Egawa, Takahiro Ochiya (Dept. Urol., Jikei Univ., Sch. Med., Dept. Cell. Signal., Natl. Can. Ctr., Inst. Med. Sci., Tokyo Med. Univ.)

前立腺癌治療におけるエクソソームの可能性 古部 文彦、伊藤 景紀、山本 雄介、木村 高弘、舘川 晋、落谷 孝広 (慈恵医大・医・泌尿器、国立がん研セ・研・細胞情報学、東京医大・医総研)

IS1-4 Exosome based delivery of therapeutic proteins Chulhee Choi (ILIAS Biologics Incorporated, Dept. Bio & Brain Engineering, KAIST)

IS1-5 Extracellular vesicles in organotrophic metastasis and drug response: implications in prostate cancer Carolina Soekmadji, Elena S. Martensuzonova, Fumihiko Urabe, Kalyani C. Patil, Gina D. Kusuma, Hong K. Lim, Marzia D. Re, Melissa C. Souther, Rebecca Lim, Grant A. Ramm, Arun Azad, Guido W. Jenster, Takahiro Ochiya (QIMR Berghofer Med. Res. Inst., Sch. of Biomed. Sci., Univ. of Queensland, Lab. of Exp. Urology, Erasmus Univ., Dept. Urology, The Jikei Univ. Sch. of Med., Translational Res. Inst., Academic Health System, Hamad Med. Corporation, The Ritchie Ctr., Hudson Inst. of Med. Res., Dept. Obstetrics & Gynaecology, Monash Univ., Dept. Clin. & Exp. Med., Univ. Hosp. of Pisa, Dept. Path., The Univ. of Melbourne, Sir Peter MacCallum Dept. Oncology, Univ. of Melbourne, Dept. Med. Oncology, Peter MacCallum Cancer Ctr., Inst. of Med. Sci., Tokyo Med. Univ.)

IS1-6 Extracellular vesicle-mediated distant signaling: Systemic adenovirotherapy via immune activation and cytotoxicity Yoshihiko Kakiuchi, Shinji Kuroda, Nobuhiko Kanaya, Kento Kumon, Tomoko Tsumura, Masashi Hashimoto, Chiaki Yagi, Ryoma Sugimoto, Yuki Hamada, Satoru Kikuchi, Masahiko Nishizaki, Shunsuke Kagawa, Hiroshi Tazawa, Yasuo Urata, Toshiyoshi Fujiwara (Dept. Gastroenterological Surg., Okayama Univ., Oncolys BioPharma, Inc.)

腫瘍融解アデノウイルスによる治療機序の次なる一手；細胞外小胞を介して全身免疫賦活と局所細胞毒性を誘発するウイルス療法 垣内 慶彦、黒田 新士、金谷 信彦、公文 剣斗、津村 朋子、橋本 将志、八木 千晶、杉本 龍馬、濱田 侑紀、菊地 寛次、西崎 正彦、香川 俊輔、田澤 大、浦田 泰生、藤原 俊義 (岡山大・消化器外科学、オンコリスバイオファーマ (株))

IS2

## Cell death, tumor suppressors and beyond

細胞死、がん抑制遺伝子、そして。

Chairpersons: Chiaki Takahashi (Div. Oncol. Mol. Biol., Cancer Res. Inst., Kanazawa Univ.)  
Sharad Kumar (Ctr. for Cancer Biol., Univ. of South Australia)

座長：高橋 智聡 (金沢大・がん進展制御研)

Sharad Kumar (Ctr. for Cancer Biol., Univ. of South Australia)

Three scientists who pioneered the understanding of cell death received the Nobel Prize two decades ago. Since then the role of cell survival & death in cancer, and the relationship between apoptosis machinery, oncogenes and tumor suppressor genes have resulted in new cancer therapeutic. This session brings together speakers who will discuss the interplay between cell death & survival and tumor suppression. The talks will cover: (i) new treatments targeting the RB1 tumor suppressor gene product or deletion, (ii) the unexpected function of caspase-2 in suppressing carcinogenesis and chromosomal instability, (iii) the role of p53-dependent cell death in the development of pancreatic cancer, (iv) a novel regulatory mechanism for the Nrf2 antioxidant system that is often abnormally activated in cancer, (v) the involvement of autophagy in the mechanism by which Survivin promotes the malignancy through its anti-apoptotic functions, and (v) a novel mechanism by which the gene product causative of Diamond-Blackfan anemia controls the p53 system. We believe that the session will provide an exciting forum for discussing of tumorigenesis beyond cell death and tumor suppressor mechanisms.

## IS2-1 Targeting RB1 status in cancer treatment

Chiaki Takahashi, Jindan Sheng, Susumu Kohno (Div. Oncol. Mol. Biol., Cancer Res. Inst., Kanazawa Univ.)

RB1 がん抑制遺伝子のステータスを標的とするがん治療  
高橋 智聡、盛金丹、河野 晋 (金沢大・がん進展制御研)

## IS2-2 Setdb1 is required for pancreatic ductal adenocarcinoma formation by inhibiting p53-mediated apoptosis

Satoshi Ogawa<sup>1,2</sup>, Akihisa Fukuda<sup>1</sup>, Makoto Sono<sup>1</sup>, Osamu Araki<sup>1</sup>, Munemasa Nagao<sup>1</sup>, Yukiko Hiramatsu<sup>1</sup>, Takahisa Maruno<sup>1</sup>, Yuki Nakanishi<sup>1</sup>, Hiroshi Seno<sup>1</sup> (<sup>1</sup>Dept. Gastro & Hepato., Kyoto Univ. Grad. Sch. Med., <sup>2</sup>Dept. Gastro & Hepato., Kobe Univ. Grad. Sch. Med.)

Setdb1 は p53 発現制御を介してアポトーシスを阻害することにより  
膵臓癌の形成に必要である  
小川 智<sup>1,2</sup>、福田 晃久<sup>1</sup>、園 誠<sup>1</sup>、荒木 理<sup>1</sup>、長尾 宗政<sup>1</sup>、平松 由紀子<sup>1</sup>、丸野 貴久<sup>1</sup>、中西 祐貴<sup>1</sup>、妹尾 浩<sup>1</sup> (<sup>1</sup>京都大・医・消化器内科、<sup>2</sup>神戸大・医・消化器内科)

## IS2-3 What can the anti-apoptotic molecule, BIRC5/Survivin, do in the autophagic world?

Chun H. Cheung<sup>1,5</sup>, Tzu Y. Lin<sup>1</sup>, Sailu Sarvagalla<sup>2</sup>, Mohane S. Coumar<sup>2</sup>, Siao M. Cheng<sup>3</sup>, Euphemia Leung<sup>4</sup> (<sup>1</sup>Inst. of Basic Med. Sci., Natl. Cheng Kung Univ., Taiwan, <sup>2</sup>Ctr. for Bioinformatics, Pondicherry Univ., India, <sup>3</sup>Natl. Inst. of Cancer Res., Natl. Health Res. Institutes, Taiwan, <sup>4</sup>Auckland Cancer Society Res. Ctr., Univ. of Auckland, New Zealand, <sup>5</sup>Dept. Pharmacology, Natl. Cheng Kung Univ., Taiwan)

## IS2-4 The Bax-Binding Protein MOAP-1 negatively regulates Nrf2 signalling in liver by disrupting p62 bodies

Victor C. Yu, Chongteik Tan, Haochun Chang, Natalie Soh (Dept. Pharm., Faculty of Sci., Natl. Univ. of Singapore)

## IS2-5 Elucidation of tumor-suppressive mechanism of Ribosomal Protein S19 associated with Diamond-Blackfan anemia

Hiroki Fujiyama<sup>1</sup>, Takuya Takafuji<sup>1</sup>, Tohru Kiyono<sup>2</sup>, Kazumasa Yoshida<sup>1</sup>, Nozomi Sugimoto<sup>1</sup>, Masatoshi Fujita<sup>1</sup> (<sup>1</sup>Dept. Cell. Biochem., Grad. Sch. Phar., Sci., Kyushu Univ., <sup>2</sup>Viol. Div., Natl. Cancer Ctr., Res. Inst.)

DBA 関連リボソームタンパク質 RPS19 によるがん抑制機構の解明  
藤山 拓己<sup>1</sup>、高藤 拓哉<sup>1</sup>、清野 透<sup>2</sup>、吉田 和真<sup>1</sup>、杉本のぞみ<sup>1</sup>、藤田 雅俊<sup>1</sup> (<sup>1</sup>九州大・薬、<sup>2</sup>国立がん研セ)

## IS2-6 Tumor and aneuploidy suppression by caspase-2

Sharad Kumar, Yoon Lim, Loretta Dorstyn (Ctr. for Cancer Biol., Univ. of South Australia)

S2

## Metastasis: Development of novel strategies through multifaceted understanding

転移:多面的な理解による新しい治療戦略の展開

Chairpersons: Kyoko Hida (Vascular Biol. Mol. Path., Grad. Sch. Dent. Med., Hokkaido Univ.)  
Daizo Koinuma (Dept. Mol. Path., Grad. Sch. of Med., Univ. of Tokyo)

座長：樋田 京子 (北海道大・院歯・血管生物分子病理学)  
鯉沼 代造 (東京大・院医・分子病理)

Cancer metastasis is the major cause of cancer-related death. During therapy, a few cancer cells which survive or acquire resistance eventually metastasize to distant organ. Cancer diversity is closely associated with metastasis. The cancer microenvironment is also involved in each step of cancer metastasis. The interaction between tumor cells and their microenvironment, including tumor stromal extracellular matrix, plays a key role in tumor metastasis. Also, cancer stromal cells such as fibroblasts, macrophages, neutrophils, lymphocytes, and vascular endothelial cells interact with cancer cells via signaling molecules, playing important roles in metastasis. In addition, the hypoxic environment and cancer-specific metabolism are involved in cancer progression. It has become clear that cancer metastasis is regulated in a much more complicating manner than previously thought. It is necessary to understand cancer metastasis from various angles and develop novel therapies. For this, new strategies for imaging cancer metastases are also required. At this symposium, six experts in tumor immunology, neutrophil, macrophage, and blood vessel biologies, cancer cell diversity, hypoxia, and premetastatic niche will introduce their recent research results. We would like to discuss novel strategies for the treatment of metastasis.

## S2-1 Molecular mechanism of neutrophil-dependent metastasis of inflammatory renal cancer

Shogo Ehata<sup>1,2</sup>, Jun Nishida<sup>1</sup>, Kosuke Miyakuni<sup>1</sup>, Daizo Koinuma<sup>1</sup>, Kohei Miyazono<sup>1</sup> (<sup>1</sup>The Univ. Tokyo, Grad. Med., Dept. Mol. Pathol., <sup>2</sup>The Univ. Tokyo, Env. Sci. Ctr.)

好中球を介した腎がん肺転移の分子メカニズム

江幡 正悟<sup>1,2</sup>、西田 純<sup>1</sup>、宮國 昂介<sup>1</sup>、鯉沼 代造<sup>1</sup>、宮園 浩平<sup>1</sup> (東京大・院医・分子病理、<sup>2</sup>東京大・環安研セ)

## S2-2 Identification and elucidation of therapeutic targets by in vivo optical imaging

Shinae Kondoh<sup>1</sup>, Hitomi Miyabara<sup>1</sup>, Ryuichiro Hirano<sup>1</sup>, Tetsuya Kadosono<sup>1</sup>, Takahiro Kuchimaru<sup>2</sup> (<sup>1</sup>Life Sci. & Tech., Tokyo Tech., <sup>2</sup>Mol. Med., Jichi Med. Univ.)

生体光イメージングによる治療標的の同定と解明

近藤 科江<sup>1</sup>、宮原 瞳<sup>1</sup>、平野 龍一郎<sup>1</sup>、門之園 哲哉<sup>1</sup>、口丸 高弘<sup>2</sup> (東工大・生命理工、<sup>2</sup>自治医大・分子病態治療研究セ)

## S2-3 Inflammation-associated premetastatic niche formation and cancer metastasis

Yoshiro Maru (Dept. Pharmacology, Tokyo Women's Med. Univ.)

転移前微小環境形成による転移促進

丸 義朗、出口 敦子 (東京女子医大・医・薬理学教室)

## S2-4 Altered cellular heterogeneity during metastasis progression

Ryoji Yao<sup>1</sup>, Satoshi Nagayama<sup>2</sup>, Takuya Okamoto<sup>1</sup> (<sup>1</sup>Dept. Cell Biol., Cancer Inst., JFCR, <sup>2</sup>Dept. Gastroenterological Surg., Cancer Inst. Hosp., JFCR)

転移に伴う細胞不均一性の変化

八尾 良司<sup>1</sup>、長山 聡<sup>2</sup>、岡本 拓也<sup>1</sup> (<sup>1</sup>(公財)がん研・研・細胞生物部、<sup>2</sup>(公財)がん研・有明病院・消化器外科)

## S2-5 Paradoxical roles of host immunity in controlling tumor progression and metastasis

Yoshihiro Hayakawa<sup>1</sup>, Kazuyoshi Takeda<sup>2</sup> (<sup>1</sup>Inst. of Nat. Med., Univ. of Toyama, <sup>2</sup>Jundendo Univ., Grad. Sch. Med.)

がん悪性化進展・転移における宿主免疫応答の二面性

早川 芳弘<sup>1</sup>、竹田 和由<sup>2</sup> (富山大・和漢研、<sup>2</sup>順天堂大・院医)

## S2-6 The role of tumor endothelial cells in cancer metastasis

Kyoko Hida (Vascular Biol. Mol. Path., Grad. Sch. Dent. Med., Hokkaido Univ.)

腫瘍血管内皮の異常とがん転移

樋田 京子 (北海道大・院歯・血管生物分子病理学)

E2

**Experimental animal models and genetically-engineered animals**

動物モデル・遺伝子改変動物

Chairperson: Yoshitaka Hippono (Chiba Cancer Ctr. Res. Inst.)

座長：筆宝 義隆 (千葉県がんセンター)

- E2-1 RECK suppresses pancreatic cancer formation, epithelial-mesenchymal transition and metastasis in mice.**  
Tomonori Masuda<sup>1</sup>, Akihisa Fukuda<sup>1</sup>, Makoto Sono<sup>1</sup>, Yuichi Fukunaga<sup>1</sup>, Takaaki Yoshikawa<sup>1</sup>, Osamu Araki<sup>1</sup>, Munemasa Nagao<sup>1</sup>, Yukiko Hiramatsu<sup>1</sup>, Satoshi Ogawa<sup>1</sup>, Takahisa Maruno<sup>1</sup>, Yuki Nakanishi<sup>1</sup>, Tomoko Matsuzaki<sup>2</sup>, Makoto Noda<sup>2</sup>, Hiroshi Seno<sup>1</sup> (<sup>1</sup>Dept. Gastroenterology & Hepatology, Kyoto Univ. Grad. Sch. Med., <sup>2</sup>Dept. Mol. Oncology, Kyoto Univ. Grad. Sch. Med.)

**RECKは膵発癌、上皮間葉転換、転移を抑制する**

益田 朋典<sup>1</sup>、福田 晃久<sup>1</sup>、藺 誠<sup>1</sup>、福永 裕一<sup>1</sup>、吉川 貴章<sup>1</sup>、荒木 理<sup>1</sup>、長尾 宗政<sup>1</sup>、平松 由紀子<sup>1</sup>、小川 智<sup>1</sup>、丸野 貴久<sup>1</sup>、中西 祐貴<sup>1</sup>、松崎 朋子<sup>2</sup>、野田 亮<sup>2</sup>、妹尾 浩<sup>1</sup> (1)京都大・医学研究科消化器内科学、2)京都大・医学研究科分子腫瘍学)

- E2-2 Induction of gastric cancer by successive oncogenic activation in the corpus**

Daisuke Douchi<sup>1</sup>, Akihiro Yamamura<sup>1,2</sup>, Junichi Matsuo<sup>2</sup>, Mitsuhiro Shimura<sup>1,2</sup>, Shinobu Ohnuma<sup>1</sup>, Takashi Kamei<sup>1</sup>, Michiaki Unno<sup>1</sup>, Yoshiaki Ito<sup>1</sup> (<sup>1</sup>Dept. Surg., Tohoku Univ., <sup>2</sup>CSI Singapore)

**胃がん多段階発癌モデルの確立**

堂地 大輔<sup>1</sup>、山村 明寛<sup>1,2</sup>、松尾 純一<sup>2</sup>、志村 充広<sup>1,2</sup>、大沼 忍<sup>1</sup>、亀井 尚<sup>1</sup>、海野 倫明<sup>1</sup>、伊藤 嘉明<sup>2</sup> (1)東北大・院・消化器外科、2)シンガポール国立大・癌科学研)

- E2-3 Dual Loss of Arid1a and Pten in pancreatic ductal cells induces ITPN and PDAC through activation of YAP/TAZ pathway**

Yuichi Fukunaga<sup>1,2,3</sup>, Akihisa Fukuda<sup>1</sup>, Makoto Sono<sup>1</sup>, Tomonori Masuda<sup>1</sup>, Takaaki Yoshikawa<sup>1</sup>, Osamu Araki<sup>1</sup>, Munemasa Nagao<sup>1</sup>, Yukiko Hiramatsu<sup>1</sup>, Satoshi Ogawa<sup>1</sup>, Takahisa Maruno<sup>1</sup>, Yuki Nakanishi<sup>1</sup>, Tatsuaki Tsuruyama<sup>4</sup>, Hiroshi Seno<sup>1</sup> (<sup>1</sup>Dept. Gastroenterology & Hepatology, Kyoto Univ. Grad. Sch. of Med., <sup>2</sup>Dept. Drug Discovery Med., Kyoto Univ. Grad. Sch. of Med., <sup>3</sup>DSP Cancer Inst., Sumitomo Dainippon Pharma Co., Ltd., <sup>4</sup>Clin. Bio Resource Ctr., Kyoto Univ. Hosp.)

**膵管細胞におけるArid1a/Ptenの両欠損はYAP/TAZ経路の活性化を介してITPN及び膵癌の発症を誘導する**

福永 裕一<sup>1,2,3</sup>、福田 晃久<sup>1</sup>、藺 誠<sup>1</sup>、益田 朋典<sup>1</sup>、吉川 貴章<sup>1</sup>、荒木 理<sup>1</sup>、長尾 宗政<sup>1</sup>、平松 由紀子<sup>1</sup>、小川 智<sup>1</sup>、丸野 貴久<sup>1</sup>、中西 祐貴<sup>1</sup>、鶴山 竜昭<sup>4</sup>、妹尾 浩<sup>1</sup> (1)京都大・院・医学研究科・消化器内科学、2)京都大・院・医学研究科・創薬医学講座、3)大日本住友製薬(株)がん創薬研、4)京都大・クリニカルバイオリソースセ)

- E2-4 Identification of molecular targets in early-onset colorectal cancers by sequencing and drug screening**

Mai Suzuki<sup>1</sup>, Yuki Shimizu<sup>1,2</sup>, Kohei Maruyama<sup>1,2</sup>, Tomoko Ohhara<sup>1</sup>, Naoya Fujita<sup>3</sup>, Satoshi Nagayama<sup>4</sup>, Ryohei Katayama<sup>1,2</sup> (<sup>1</sup>Div. Exp. Chemother., Cancer Chemother. Ctr., JFCR, <sup>2</sup>Dept. CBMS, Grad. Sch. Front. Sci., The Univ. of Tokyo, <sup>3</sup>Cancer Chemother. Ctr., JFCR, <sup>4</sup>Dept. Gastroenterological Surg., Cancer Inst. Hosp., JFCR)

**若年者大腸がんの変異解析と薬剤感受性スクリーニングによる新規治療標的の発見**

鈴木 麻衣<sup>1</sup>、清水 裕貴<sup>1,2</sup>、丸山 航平<sup>1,2</sup>、大原 智子<sup>1</sup>、藤田 直也<sup>3</sup>、長山 聡<sup>4</sup>、片山 量平<sup>1,2</sup> (1) (公財)がん研・化療セ・基礎研究部、2)東京大・新領域・メディカル情報生命、3) (公財)がん研・化療セ、4) (公財)がん研・有明病院・消化器外科)

- E2-5 High-throughput screening to elucidate in vivo oncogenicity of lymphoma-related genetic alterations**  
Kentaro Yamaguchi<sup>1,2</sup>, Junji Koya<sup>1</sup>, Kota Yoshifuji<sup>3</sup>, Yuta Ito<sup>1,4</sup>, Mitsuhiro Yuasa<sup>1,5</sup>, Yuki Saito<sup>1,6</sup>, Mariko Tabata<sup>1,7</sup>, Sumito Shingaki<sup>1</sup>, Yasunori Kogure<sup>1</sup>, Koichi Ohshima<sup>8</sup>, Keisuke Kataoka<sup>1,2</sup> (<sup>1</sup>Div. Mol. Oncol., Natl. Cancer Ctr. Res. Inst., Tokyo, Japan, <sup>2</sup>Div. Hematol., Keio Univ., Tokyo, Japan, <sup>3</sup>Div. Hematol. Tokyo Med. Dent. Univ., Tokyo, Japan, <sup>4</sup>Div. Clin. Oncol. Hematol., Jikei Univ., Tokyo, Japan, <sup>5</sup>Dept. Pathol., Tokyo Univ., Tokyo, Japan, <sup>6</sup>Dept. Gastroenterol., Keio Univ., Tokyo, Japan, <sup>7</sup>Dept. Urology, Tokyo Univ., Tokyo, Japan, <sup>8</sup>Dept. Pathol., Kurume Univ., Fukuoka, Japan)

**高効率スクリーニングによるリンパ腫関連遺伝子異常の生体内における造腫瘍能の網羅的解明**

山口 健太郎<sup>1,2</sup>、古屋 淳史<sup>1</sup>、吉藤 康太<sup>3</sup>、伊藤 勇太<sup>1,4</sup>、湯浅 光博<sup>1,5</sup>、斎藤 優樹<sup>1,6</sup>、田畑 真梨子<sup>1,7</sup>、新垣 清登<sup>1</sup>、木暮 泰寛<sup>1</sup>、大島 孝一<sup>8</sup>、片岡 圭亮<sup>1,2</sup> (1)国立がん研セ・研・分子腫瘍学、2)慶應大・医・血液内科、3)東京医歯大・血液内科、4)東京慈恵会医大・腫瘍・血液内科、5)東京大・医・人体病理学、6)慶應大・医・消化器内科、7)東京大・泌尿器外科、8)久留米大・病理学教室)

- E2-6 A novel humanized mouse model for in vivo evaluation of cancer immunotherapy targeting human macrophages**

Yasuyuki Saito<sup>1</sup>, Ric Iida<sup>1</sup>, Daisuke Hazama<sup>1</sup>, Takenori Kotani<sup>1</sup>, Yoji Murata<sup>1</sup>, Hiroshi Yokozaki<sup>2</sup>, Takashi Marozaki<sup>1</sup> (<sup>1</sup>Div. Mol. & Cell. Signal., Kobe Univ. Grad. Sch. Med., <sup>2</sup>Dept. Path. Kobe Univ. Grad. Sch. Med.)

**免疫系ヒト化マウスモデルによるヒトマクロファージを標的としたがん免疫療法の開発**

齊藤 泰之<sup>1</sup>、飯田 理恵<sup>1</sup>、羽間 大祐<sup>1</sup>、小谷 武徳<sup>1</sup>、村田 陽二<sup>1</sup>、横崎 宏<sup>2</sup>、的崎 尚<sup>1</sup> (1)神戸大・院医・シグナル統合学、2)神戸大・院医・病理学)

E6

## DNA replication/cell cycle/genomic instability

DNA複製・細胞周期・ゲノム不安定性

Chairperson: Hiroaki Tachiwana (The Cancer Inst. of JFCR)

座長: 立和名 博昭 (公益財団法人がん研究会がん研究所)

## E6-1 Mathematical analysis of the mechanism of how centriole biogenesis regulators are transported to mother centrioles

Takanori Nakamura<sup>1</sup>, Noriko Tokai<sup>1</sup>, Takashi Nakazawa<sup>2</sup>, Tatsuki Mori<sup>2</sup>, Takashi Suzuki<sup>2</sup>, Mutsuhiro Takekawa<sup>1</sup> (<sup>1</sup>Dev. Cell Signal. Mol. Med., IMS, The Univ. of Tokyo, <sup>2</sup>MMDS Ctr., Osaka Univ.)

数理解析手法を駆使した「中心体複製開始機構とその破綻によって惹起される発癌機構」の解明

中村 貴紀<sup>1</sup>、渡海 紀子<sup>1</sup>、中澤 崇<sup>2</sup>、森 竜樹<sup>2</sup>、鈴木 貴<sup>2</sup>、武川 睦寛<sup>1</sup> (東京大・医科研・分子シグナル制御、<sup>2</sup>大阪大・MMDS セ)

## E6-2 Bipartite binding domain of the chromosomal passenger complex confers specificity to its interaction with HP1

Kosuke Sako, Toru Hirota (Div. Exp. Path., Cancer Inst. of JFCR)

染色体パッセンジャー複合体の二連結ドメインは、HP1 との相互作用に特異性を与える

迫 洗佑、広田 亨 ((公財) がん研・研・実験病理部)

## E6-3 Unresolved aberrant chromatin conformations generated through replication leads to genomic instability

Yoshiharu Kusano, Ryusuke Nozawa, Toru Hirota (Div. Exp. Path., Cancer Inst., JFCR)

DNA複製に起因する異常クロマチン構造の解消機構破綻から生じるゲノム不安定性

草野 善晴、野澤 竜介、広田 亨 ((公財) がん研・研・実験病理部)

## E6-4 Enhanced Cell Transformation by ATR-mediated Replication Stress Tolerance Mechanism

Bunsyo Shiotani (Div. Cell. Signal., Natl. Cancer Ctr. Res. Inst.)

ATRを介した複製ストレス寛容機構による細胞形質転換の促進

塩谷 文章 (国立がん研セ・研・細胞情報学)

## E6-5 Food ingredient benzyl isothiocyanate suppresses the cell proliferation depending on chromosomal instability

Naomi Kanoh (Inst. of Biomed. Sci., Tokushima Univ. Grad. Sch., Japan)

食品成分ベンジルイソチオシアネートは染色体不安定性依存的に細胞増殖を抑制する

叶 奈緒美 (徳島大・院医歯薬)

## E6-6 Replication-stress-associated DSBs induced by ionizing radiation risk genomic destabilization and clonal evolution

Yusuke Matsuno<sup>1,2</sup>, Yosuke Tanaka<sup>3</sup>, Hiroyuki Mano<sup>3</sup>, Satoshi Tashiro<sup>4</sup>, Kenichi Yoshioka<sup>2</sup> (<sup>1</sup>Dept. Chem., Fac. Sci., Tokyo Univ. of Sci., <sup>2</sup>Lab. Genome Stability Maint., Natl. Cancer Ctr. Res. Inst., <sup>3</sup>Dept. Cell. Signal., Natl. Cancer Ctr. Res. Inst., <sup>4</sup>RIRBM, Hiroshima Univ.)

放射線によって誘導される複製ストレスに伴うDNA二重鎖切断は、ゲノム不安定性とこれに伴うクローン進化を誘導する

松野 悠介<sup>1,2</sup>、田中 庸介<sup>3</sup>、間野 博行<sup>3</sup>、田代 聡<sup>4</sup>、吉岡 研一<sup>2</sup> (東京理科大・院理・化学、<sup>2</sup>国立がん研セ・研・ゲノム不安定性制御、<sup>3</sup>国立がん研セ・研・細胞情報学、<sup>4</sup>広島大・原医研)

E4-1

## Oncogenes and tumor-suppressor genes (1)

がん遺伝子・がん抑制遺伝子 (1)

Chairperson: Keiko Nakayama (Tohoku. Univ. Grad. Sch. of Med.)

座長: 中山 啓子 (東北大・院医)

## E4-1-1 Tumor microenvironment-mediated upregulation of stomatin for suppressing the tumor growth by inhibiting the Akt pathway

Hisakazu Ogita, Akira Sato (Div. Mol. Med. Biochem., Shiga Univ. Med. Sci.)

ストマチンはがん微小環境で発現増加し、Akt経路を抑制してがんの増大を阻止する

扇田 久和、佐藤 朗 (滋賀医大・分子病態学)

## E4-1-2 Characterization of URST1 and its downstream pathways involved in malignant potential of lung cancer

Atsushi Takano<sup>1,2,3</sup>, Yohei Miyagi<sup>3</sup>, Yataro Daigo<sup>1,2,3</sup> (<sup>1</sup>Ctr. Antibody Vaccine Therapy, Inst. Med. Sci., Univ. of Tokyo, <sup>2</sup>Dept. Med. Oncology & Cancer Ctr., Shiga Univ. Med. Sci., <sup>3</sup>Ctr. Advanced Med. agaInst. Cancer, Shiga Univ. Med. Sci., <sup>4</sup>Dept. Mol. Mol., Kanagawa Cancer Ctr.)

肺がんの新規候補URST1の同定

高野 淳<sup>1,2,3</sup>、宮城 洋平<sup>4</sup>、醍醐 弥太郎<sup>1,2,3</sup> (東京大・医科研・抗体ワクチンセ、<sup>2</sup>滋賀医大・臨床腫瘍学講座・腫瘍セ、<sup>3</sup>滋賀医大・先端がん研セ、<sup>4</sup>神奈川県がんセ・がん分子病態学)

## E4-1-3 Involvement of URST4 protein in malignant nature of oral cancer

Ming Zhu<sup>1,2</sup>, Atsushi Takano<sup>1,2,3</sup>, Bayarbat Tsevegjav<sup>1,2</sup>, Yoshihiro Yoshitake<sup>4</sup>, Masanori Shinohara<sup>4</sup>, Yataro Daigo<sup>1,2,3</sup> (<sup>1</sup>Dept. Med. Oncol., Shiga Univ. of Med. Sci., <sup>2</sup>Ctr. for Advanced Med. agaInst. Cancer, Shiga Univ. of Med. Sci., <sup>3</sup>Ctr. for Antibody & Vaccine Ther., Univ. of Tokyo, <sup>4</sup>Dept. Oral & Maxillofacial Surg. Kumamoto Univ.)

口腔がんの新規バイオマーカー・治療標的分子であるURST4の機能解析

祝 銘<sup>1,2</sup>、高野 淳<sup>1,2,3</sup>、シエベグジヤブ バヤルバット<sup>1,2</sup>、吉武 義泰<sup>4</sup>、篠原 正徳<sup>4</sup>、醍醐 弥太郎<sup>1,2,3</sup> (滋賀医大・臨床腫瘍学講座、<sup>2</sup>滋賀医大・先端がん研セ、<sup>3</sup>東京大・医科研・抗体ワクチンセ、<sup>4</sup>熊本大・医付属病院・歯科口腔外科)

## E4-1-4 Validation of URST5 as a novel cancer biomarker and therapeutic target for oral cancer

Bayarbat Tsevegjav<sup>1,2</sup>, Atsushi Takano<sup>1,2,3</sup>, Ming Zhu<sup>1,2</sup>, Yoshihiro Yoshitake<sup>4</sup>, Masanori Shinohara<sup>4</sup>, Yataro Daigo<sup>1,2,3</sup> (<sup>1</sup>Dept. Med. Oncol. & Cancer Ctr., Shiga Univ. Med. Sci., <sup>2</sup>Ctr. Advanced Med. agaInst. Cancer, Shiga Univ. of Med. Sci., <sup>3</sup>Ctr. Antibody & Vaccine Ther., Inst. Med. Sci., Univ. Tokyo, <sup>4</sup>Dept. Oral & Maxillofacial Surg. Kumamoto Univ.)

## E4-1-5 Hypoxia associated lncRNA HYPAL promotes proliferation of gastric cancer as ceRNA

Haiyan Piao<sup>1</sup>, Jun Zhang<sup>1,2</sup> (<sup>1</sup>Liaoning Province Cancer Hosp. & Inst., <sup>2</sup>Kumamoto Univ., Kumamoto)

## E4-1-6 KRAS-induced oncogenic ROS is suppressed by a dual VDAC1 and KDELR1 regulator

Toshiyuki Tsunoda<sup>1,2</sup>, Kensuke Nishi<sup>1</sup>, Senji Shirasawa<sup>1,2</sup> (<sup>1</sup>Dept. Cell Biol., Fac. Med., Fukuoka Univ., <sup>2</sup>Ctr. Res. Inst. for Adv. Mol. Med., Fukuoka Univ.)

KRASが誘導する発癌性ROSはVDAC1およびKDELR1の2重調節剤により抑制される

角田 俊之<sup>1,2</sup>、西 憲祐<sup>1</sup>、白澤 専二<sup>1,2</sup> (福岡大・医・細胞生物学、<sup>2</sup>福岡大・医・先端分子医学研)

Room 8 Sep. 30 (Thu.) 10:15-11:30 E

**E4-2 Oncogenes and tumor-suppressor genes (2)**  
がん遺伝子・がん抑制遺伝子 (2)

Chairperson: Hironori Harada (Sch. of Life Sci., Lab. of Oncol., Tokyo Univ. of Pharm. and Life Sci.)

座長: 原田 浩徳 (東京薬科大・生命科学・腫瘍医学研究室)

**E4-2-1 Inactivation of CDS1 inhibits proliferation of NPC through by blocking the accumulation of lipid droplets**  
Wang Yifang, Qian Zheng, Xiaohui Zhou, Xiaoying Zhou (Guangxi Med. Univ.)**E4-2-2 The inactivated P16 gene was modified by DNA methylation in nasopharyngeal symbiotic bacteria**  
Li Limei<sup>1,2,3,4</sup>, Bo Li<sup>3</sup>, Yunliang Lu<sup>2</sup>, Zhe Zhang<sup>3</sup>, Xue Xiao<sup>2</sup>, Xiaoying Zhou<sup>4</sup>, Ping Li<sup>1</sup> (<sup>1</sup>Dept. Pathol., College & Hosp. of Stomatology Guangxi Med. Univ., <sup>2</sup>Dept. Otolaryngology-Head&Neck Surg., GXMU, <sup>3</sup>Key Lab. of High-Incidence-Tumor Prevention & Treatment, Ministry of Education, GXMU, <sup>4</sup>Life Sci. Inst., GXMU)**E4-2-3 Inactivation of Sperm-Associated Antigen 6 promotes proliferation of nasopharyngeal carcinoma**  
Zhong Xuemin<sup>1</sup>, Xuemin Zhong<sup>1</sup>, Zhang Zhe<sup>1</sup>, Xiaoying Zhou<sup>2</sup>, Guangwu Huang<sup>1</sup> (<sup>1</sup>Dept. Otolaryngology-Head & Neck Surg., GXMU, <sup>2</sup>Life Sci. Institutet, Guangxi Med. Univ.)**E4-2-4 To identify the key molecule regulating the characteristics of signet ring cells adenocarcinoma**  
Lingfeng Fu<sup>1,2</sup>, Luke Bu<sup>1,2</sup>, Atsuko Yonemura<sup>1,2</sup>, Noriko Yasuda<sup>1</sup>, Takahiko Akiyama<sup>1,2</sup>, Fumimasa Kitamura<sup>1,2</sup>, Tadahito Yasuda<sup>1,2</sup>, Tomoyuki Uchihara<sup>1,2</sup>, Hideo Baba<sup>1</sup>, Takatsugu Ishimoto<sup>1,2</sup> (<sup>1</sup>Kumamoto Univ. Dept. Gastroenterological Surg., <sup>2</sup>Kumamoto Univ. Internat. Res. Ctr. for Med. Sci.)

印環細胞型胃癌に特異的な分子による癌進展機構の解明

付 凌峰<sup>1,2</sup>, Luke Bu<sup>1,2</sup>, 米村 敦子<sup>1,2</sup>, 安田 法子<sup>1</sup>, 秋山 貴彦<sup>1,2</sup>, 北村 文優<sup>1,2</sup>, 安田 忠仁<sup>1,2</sup>, 内原 智幸<sup>1,2</sup>, 馬場 秀夫<sup>1</sup>, 石本 崇胤<sup>1,2</sup> (<sup>1</sup>熊本大・生命科学・消化器外科, <sup>2</sup>熊本大・医・国際医学研究機構)**E4-2-5 Pleural mesothelioma-related gene identified through proteomic analyses regulates eIF2a and a cellular stress-response**  
Lisa I. Kondo, Kiyoshi Yanagisawa (Mol. & Cancer Med., Faculty of Pharm., Meijo Univ.)

プロテオミクス解析から同定された胸膜悪性中皮腫関連遺伝子によるストレス反応分子 eIF2a の制御

近藤 (井田) 梨沙、柳澤 聖 (名城大・薬・腫瘍分子医学)

**E4-2-6 Withdrawn**

Room 9 Sep. 30 (Thu.) 9:00-10:15 E

**E12-1 Cancer immunity (1)**  
がん免疫 (1)

Chairperson: Yasuhiko Nishioka (Dept. Respir Med. &amp; Rheumatol, Tokushima Univ.)

座長: 西岡 安彦 (徳島大・院・呼吸器・膠原病内科学分野)

**E12-1-1 M2-like macrophage on injured kidney promotes kidney cancer progression through T cell elimination**  
Taisuke Ishii<sup>1</sup>, Koji Nagaoka<sup>2</sup>, Kazuhiro Kakimi<sup>2</sup> (<sup>1</sup>The Univ. of Tokyo Med. Div. Nephrology&Endocrinology, <sup>2</sup>The Univ. of Tokyo Hosp. Dept. ImmunoTherap.)

障害腎における M2-like マクロファージは T 細胞浸潤抑制を介してマウス腎癌発達を促進させる

石井 太祐<sup>1</sup>、長岡 孝治<sup>2</sup>、垣見 和宏<sup>2</sup> (<sup>1</sup>東京大・医・腎・内分泌、<sup>2</sup>東京大・病院・免疫細胞治療)**E12-1-2 Activated neutrophils can suppress activated T lymphocyte migration**Kohei Tamura<sup>1</sup>, Yuki Kaneko<sup>2</sup>, Yurie Futoh<sup>3</sup>, Kazuya Takahashi<sup>2</sup>, Yuki Kimura<sup>2</sup>, Akira Saito<sup>2</sup>, Mineyuki Tojo<sup>2</sup>, Rihito Kanamaru<sup>2</sup>, Ai Sadatomo<sup>2</sup>, Hideyo Miyato<sup>2</sup>, Hideyuki Ohzawa<sup>3</sup>, Yasushi Saga<sup>1</sup>, Yuji Takei<sup>1</sup>, Hiroyuki Fujiwara<sup>1</sup>, Joji Kitayama<sup>2,4</sup> (<sup>1</sup>Dept. Gynecol., Jichi Med. Univ., <sup>2</sup>Dept. Surg., Jichi Med. Univ., <sup>3</sup>Dept. Clin. Oncol., Jichi Med. Univ., <sup>4</sup>Ctr. Clin. Res., Jichi Med. Univ.)

活性化好中球は活性化 T 細胞の遊走能を抑制する

田村 昂平<sup>1</sup>、金子 勇貴<sup>2</sup>、風當 ゆりえ<sup>2</sup>、高橋 和也<sup>2</sup>、木村 有希<sup>2</sup>、齋藤 晶<sup>2</sup>、東條 峰之<sup>2</sup>、金丸 理人<sup>2</sup>、佐田友 藍<sup>2</sup>、宮戸 秀世<sup>2</sup>、大澤 英之<sup>3</sup>、嵯峨 泰<sup>1</sup>、竹井 裕二<sup>1</sup>、藤原 寛行<sup>1</sup>、北山 丈二<sup>2,4</sup> (<sup>1</sup>自治医大・附属病院・産婦人科, <sup>2</sup>自治医大・附属病院・消化器移植一般外科, <sup>3</sup>自治医大・附属病院・臨床腫瘍科, <sup>4</sup>自治医大・附属病院・臨床研究支援セ)**E12-1-3 Acidic microenvironment increased the anti-tumor effect of  $\gamma\delta$ T cell on A549 lung cancer cells**

Shura Yarimizu, Shigekuni Hosogi, Mina Suzuki, Nobuhisa Todo, Daiki Shimizu, Yusuke Sano, Natsuki Imayoshi, Keigo Amari, Makou Tomogane, Yuki Toda, Eishi Ashihara (Dept. Clin. &amp; Transl. Physiol. Kyoto Pharm. Univ.)

酸性がん微小環境はガンマデルタ T 細胞の A549 肺癌細胞に対する抗腫瘍効果を増強する。

鍾水 修欄、細木 誠之、鈴木 美那、藤堂 暢久、清水 大器、佐野 友亮、今吉 菜月、甘利 圭悟、友金 眞光、戸田 侑紀、芦原 英司 (京都薬科大・薬・病態生理学分野)

**E12-1-4 Dual-Reactive Immunoglobulin Clones to Densely Sulfated Glycosaminoglycan and Nucleic Acids from Tumor Microenvironment**Genta Furuya<sup>1</sup>, Hiroto Katoh<sup>1</sup>, Daisuke Komura<sup>1</sup>, Tetsuo Ushiku<sup>2</sup>, Shumpei Ishikawa<sup>1</sup> (<sup>1</sup>Dept. Preventive Med., The Univ. of Tokyo, <sup>2</sup>Dept. Pathol., The Univ. of Tokyo)

腫瘍微小環境より発生した高密度硫酸化グリコサミノグリカンと核酸の双方に反応する免疫グロブリンクローン

古谷 弦太<sup>1</sup>、加藤 洋人<sup>1</sup>、河村 大輔<sup>1</sup>、牛久 哲男<sup>2</sup>、石川 俊平<sup>1</sup> (<sup>1</sup>東京大・医・衛生学分野, <sup>2</sup>東京大・医・人体病理学分野)**E12-1-5 In situ delivery of iPSC-derived dendritic cells with local radiotherapy generates systemic antitumor immunity**

Takaaki Oba, Kenichi Ito (Div. Breast &amp; Endocrine Surg., Shinshu Univ.)

iPS 細胞由来樹状細胞腫瘍内局注と局所放射線治療による全身抗腫瘍免疫の樹立

大場 崇旦、伊藤 研一 (信州大・医・乳腺内分泌外科)

**E12-1-6 Modeling of Tumor-on-a-Chip using HLA edited iPSC cell-derived vascular endothelial cells for cancer immune cell therapy**  
Yuta Mishima<sup>1</sup>, Shin Kaneko<sup>1,2</sup> (<sup>1</sup>Univ. Tsukuba, Fac. Med., TMRC, <sup>2</sup>Kyoto Univ., CiRA)

がん免疫細胞療法の評価を目的として HLA 改変 iPSC 細胞由来血管内皮細胞を用いた Tumor-on-a-Chip の開発

三嶋 雄太<sup>1</sup>、金子 新<sup>1,2</sup> (<sup>1</sup>筑波大・医学医療系 TMRC, <sup>2</sup>京都大・iPS 細胞研)

E12-2 Cancer immunity (2)  
がん免疫 (2)

Chairperson: Yoshiaki Akatsuka (Dept. Immunol., Nagoya Univ. Grad. Sch. of Med.)

座長: 赤塚 美樹 (名古屋大・院医・分子細胞免疫学)

- E12-2-1 A new strategy for inducing potent anti-tumor NK immunity**  
Yamato Ogiwara<sup>1</sup>, Kana Uegaki<sup>1</sup>, Yasushi Uemura<sup>2</sup>, Rong Zhang<sup>2</sup>, Chic Kudo<sup>1</sup> (<sup>1</sup>Dept. Immune Med., Natl. Cancer Ctr. Res. Inst., <sup>2</sup>Div. Cancer Immunotherapy, EPOC, Natl. Cancer Ctr.)  
**NK 免疫を増強し得る新たな治療戦略**  
荻原 大和<sup>1</sup>、上垣 佳奈<sup>1</sup>、植村 靖史<sup>2</sup>、張 エイ<sup>2</sup>、工藤 千恵<sup>1</sup> (<sup>1</sup>国立がん研セ・研・免疫創薬部門、<sup>2</sup>国立がん研セ・EPOC 免疫療法)
- E12-2-2 A novel not- $\alpha$  IL-2 elicits potent anti-tumor activity in mice by improving the effector to regulatory T cell balance.**  
Maki Kobayashi<sup>1,2,3</sup>, Naoko Ogama<sup>1</sup>, Katsuhiko Kojima<sup>4</sup>, Tatsuro Fukuhara<sup>3</sup>, Nobuyuki Tanaka<sup>1</sup> (<sup>1</sup>Cancer Biol. & Therap., Miyagi Cancer Ctr., Res. Inst., <sup>2</sup>Div. Resp. Oncol., Tohoku Univ., Grad. Sch. of Med., <sup>3</sup>Dept. Resp. Med., Miyagi Cancer Ctr., <sup>4</sup>Dept. MicroBiol. & Immunol., Shinshu Univ. Sch. of Med.)  
**IL-2 受容体  $\alpha$  鎖結合性を喪失させた新規 IL-2 はエフェクター/制御性 T 細胞バランスを改善することで抗腫瘍活性を発揮する**  
小林 真紀<sup>1,2,3</sup>、小鎌 直子<sup>1</sup>、小嶋 克彦<sup>4</sup>、福原 達朗<sup>3</sup>、田中 伸幸<sup>1</sup> (<sup>1</sup>宮城県がんセ・研・がん先進治療開発、<sup>2</sup>東北大・院・呼吸器科腫瘍学、<sup>3</sup>宮城県がんセ・呼吸器内科、<sup>4</sup>信州大・医・免疫微生物学)
- E12-2-3 Turning immunologically cold tumors into hot ones by activating hepatoma-intrinsic FADD/NF- $\kappa$ B/CCL5 pathway**  
Lu Jiahuan<sup>5</sup>, Jiahuan Lu<sup>1,2,3,4,5</sup>, Jing Wang<sup>4,5</sup>, Yalin Tu<sup>4,5</sup>, Weiqin Yang<sup>4,5</sup>, Wenshu Tang<sup>4,5</sup>, Zhewen Xiong<sup>4,5</sup>, Alfred S. Cheng<sup>4,5</sup>, Anthony W. Chan<sup>1,2,3,5</sup>, Ka F. To<sup>1,2,3,5</sup>, Jingying Zhou<sup>4,5</sup> (<sup>1</sup>Dept. Anatomical & Cell. Path., <sup>2</sup>State Key Lab. of Translational Oncology, <sup>3</sup>Prince of Wales Hosp., <sup>4</sup>Sch. of BioMed. Sci., <sup>5</sup>The Chinese Univ. of Hong Kong)
- E12-2-4 Generation of neoantigen-specific T cells for adoptive cell transfer for treating head and neck squamous cell carcinoma**  
Ren Lili<sup>1</sup>, Teng Wei<sup>1,2</sup>, Matthias Leisegang<sup>3,4,5,6</sup>, Ming Xia<sup>1</sup>, Kazuma Kiyotani<sup>7</sup>, Ning Li<sup>1</sup>, Chenquan Zeng<sup>1</sup>, Chunyan Deng<sup>1</sup>, Jinxing Jiang<sup>1</sup>, Makiko Harada<sup>7</sup>, Nishant Agrawal<sup>8</sup>, Liangping Li<sup>2</sup>, Hui Qi<sup>1</sup>, Yusuke Nakamura<sup>7</sup> (<sup>1</sup>Cytherapy Lab., Shenzhen Peoples Hosp., Shenzhen 518020, Guangdong, China, <sup>2</sup>The First Affiliated Hosp., Jinan Univ., Guangzhou, Guangdong, China, <sup>3</sup>Inst. of Immunol., Charite - Univ. Med. Berlin, Berlin, Germany, <sup>4</sup>David & Etta Jonas Ctr., The Univ. of Chicago, <sup>5</sup>German Cancer Consortium (DKTK), partner site Berlin, Berlin, Germany, <sup>6</sup>German Cancer Res. Ctr. (DKFZ), Heidelberg, Germany, <sup>7</sup>JFCR, <sup>8</sup>Dept. Surg., The Univ. of Chicago, Chicago, IL, USA)
- E12-2-5 Characterization of HLA class I-unrestricted T cells found in tumor infiltrating lymphocytes of breast cancer patients**  
Hayee Abdul<sup>1</sup>, Satoshi Yamaguchi<sup>2</sup>, Hiroshi Hamana<sup>1</sup>, Kiyomi Shitaoka<sup>2</sup>, Eiji Kobayashi<sup>1</sup>, Tatsuhiko Ozawa<sup>1</sup>, Atsushi Muraguchi<sup>1</sup>, Hiroyuki Kishi<sup>1</sup> (<sup>1</sup>Dept. Immunol., Uni of Toyama, <sup>2</sup>Dept. 1st Internal Med., Univ. of Toyama, <sup>3</sup>Dept. Immunol., Hiroshima Uni)
- E12-2-6 Selective expansion of tumor specific CD8 T cells with engineered Antigen Presenting Exosome**  
Xiabing Lyu<sup>1</sup>, Tomoyoshi Yamano<sup>2,3</sup>, Rikinari Hanayama<sup>2,3</sup> (<sup>1</sup>Kanazawa Univ. Grad. Sch. of Med. Sci., <sup>2</sup>Kanazawa Univ. Nano Life Sci. Inst., <sup>3</sup>Dept. Immunol., Kanazawa Univ.)  
**人工エクソソームを用いたがん特異的 CD8T 細胞増強法の開発**  
呂 夏冰<sup>1</sup>、山野 友義<sup>2,3</sup>、華山 力成<sup>2,3</sup> (<sup>1</sup>金沢大・医薬保健総合研究科、<sup>2</sup>金沢大・ナノ生命科学研、<sup>3</sup>金沢大・医薬保健研究域 医学系)

J6 DNA replication/cell cycle/genomic instability  
DNA複製・細胞周期・ゲノム不安定性

Chairperson: Akimitsu Konishi (Gunma Univ.)

座長: 小西 昭充 (群馬大)

- J6-1 Centromeric SET oncogene product, a PP2A inhibitor, induces a chromosomal instability by activating Aurora B kinase**  
Yasuhiko Terada (Waseda Univ., Sch. of Advanced Sci. & Engineering)  
**がん遺伝子・SET タンパク質は Aurora B kinase を過剰に活性化することによって染色体不安定性を誘導する**  
寺田 泰比古 (早稲田大・先進理工学研究所)
- J6-2 Physiological role of centrosome pairs during S phase**  
Yo Tojo<sup>1</sup>, Akira Nakanishi<sup>1</sup>, Yoshio Miki<sup>1,2</sup> (<sup>1</sup>Dept. Mol. Genet., Tokyo Med. & Dent. Univ.(TMDU), <sup>2</sup>Dept. Mol. Diagnosis, JFCR, The Cancer Inst.)  
**S 期における中心体隣接の生理的役割**  
東條 陽<sup>1</sup>、中西 啓<sup>1</sup>、三木 義男<sup>1,2</sup> (<sup>1</sup>東京医歯大・難治疾患研、<sup>2</sup>癌研・研・遺伝子診断)
- J6-3 Long noncoding RNA TUG1 regulates R-loop resolution and maintains cancer cell proliferation**  
Miho Suzuki, Kenta Iijima, Keiko Shinjo, Yutaka Kondo (Div. Cancer Biol., Nagoya Univ., Grad. Sch. of Med.)  
**長鎖非翻訳 RNA TUG1 は R-loop を解消しがん細胞の増殖を促進する**  
鈴木 美穂、飯島 健太、新城 恵子、近藤 豊 (名古屋大・医・腫瘍生物学)
- J6-4 Unravelling pathological significance of aneuploidy in patient-derived cancer specimen**  
Tetsuya Negoro<sup>1,3</sup>, Hiroshi Kawachi<sup>2</sup>, Toru Hirota<sup>1</sup> (<sup>1</sup>Cancer Inst. Japanese Foundation For Cancer Res., Exp. Path., <sup>2</sup>Cancer Inst. Japanese Foundation For Cancer Res., Path., <sup>3</sup>Dept. NeuroSurg., Kurume Univ. Sch. of Med.)  
**ヒト患者由来がん組織における異数性の病理学的意義**  
音琴 哲也<sup>1,3</sup>、河内 洋<sup>2</sup>、広田 亨<sup>1</sup> (<sup>1</sup>(公財)がん研・研・実験病理部、<sup>2</sup>(公財)がん研・研・病理部、<sup>3</sup>久留米大・医脳神経外科)
- J6-5 Dynamics of giant cancer cells in tumor microenvironment**  
Go Itoh<sup>1</sup>, Masakazu Yashiro<sup>2</sup>, Masamitsu Tanaka<sup>1</sup> (<sup>1</sup>Dept. Mol. Med. & Biochem., Akita Univ. Med., <sup>2</sup>Mol. Oncol. & Therap., Osaka City Univ. Med.)  
**がん微小環境における巨大癌細胞の動態**  
伊藤 剛<sup>1</sup>、八代 正和<sup>2</sup>、田中 正光<sup>1</sup> (<sup>1</sup>秋田大・医・分子生化学、<sup>2</sup>大阪市立大・医・癌分子病態制御)
- J6-6 BRCA1 transports DNA-damaging signal to centrosome through its phosphorylation by ATM**  
Natsuko Chiba<sup>1</sup>, Megumi Kikuchi<sup>1</sup>, Zhenzhou Fang<sup>1</sup>, Takato Goto<sup>1</sup>, Yuki Yoshino<sup>1</sup>, Chikashi Ishioka<sup>2</sup>, Huicheng Qi<sup>1</sup> (<sup>1</sup>Dept. Cancer Biol., IDAC, Tohoku Univ., <sup>2</sup>Dept. Clin. Oncol., Tohoku Univ. Grad. Med.)  
**BRCA1 は ATM によるリン酸化を介して DNA 損傷シグナルを中心体に輸送する**  
千葉 奈津子<sup>1</sup>、菊地 めぐみ<sup>1</sup>、方 震宙<sup>1</sup>、後藤 孝太<sup>1</sup>、吉野 優樹<sup>1</sup>、石岡 千加史<sup>2</sup>、齊 匯成<sup>1</sup> (<sup>1</sup>東北大・加齢研・腫瘍生物学、<sup>2</sup>東北大・医・臨床腫瘍学)



Room 10 Sep. 30 (Thu.) 10:15-11:30

J

J14-1

**Cancer basic, diagnosis and treatment (1):  
Pancreatic cancer**

臓器がんの基礎・診断・治療 (1): 膵がん

Chairperson: Takao Ohtsuka (Dept. Digestive Surg., Breast and Thyroid Surg., Kagoshima Univ.)

座長: 大塚 隆生 (鹿児島大・消化器・乳腺甲状腺外科)

**J14-1-1 Morphologic and molecular landscape of pancreatic cancer precursor, intraductal papillary mucinous neoplasm**Yusuke Mizukami<sup>1,2</sup>, Yusuke Ono<sup>1,2</sup>, Kenji Takahashi<sup>1</sup>, Kenzui Taniue<sup>2,3</sup>, Hidenori Karasaki<sup>2</sup>, Yuko Omori<sup>4</sup>, Toru Furukawa<sup>4</sup> (1)Dept. Med., Asahikawa Med. Univ., (2)Inst. Biomed. Res., Sapporo Higashi Tokushukai Hosp., (3)Isotope Sci. Ctr., The Univ. of Tokyo, (4)Dept. Invest Pathol, Tohoku Univ. Grad. Sch. Med.)

形態的及びゲノムプロファイリングに基づく膵癌前駆病変 IPMN の特性

水上 裕輔<sup>1,2</sup>、小野 裕介<sup>1,2</sup>、高橋 賢治<sup>1</sup>、谷上 賢瑞<sup>2,3</sup>、唐崎 秀則<sup>2</sup>、大森 優子<sup>4</sup>、古川 徹<sup>4</sup> (1)旭川医大・医・内科学、(2)札幌東徳洲会病院・医学研、(3)東京大・アイソトープ、(4)東北大・医・病態病理学)**J14-1-2 Molecular basis of immune suppressive microenvironment specified by cancer-associated fibroblasts in pancreatic cancer**Kazunori Aoki<sup>1</sup>, Hironori Fukuda<sup>1</sup>, Makiko Yamashita<sup>1</sup>, Osamu Natori<sup>2</sup>, Yukari Nishito<sup>2</sup>, Hideaki Mizuno<sup>2</sup>, Hiroyuki Tsunoda<sup>2</sup>, Atsushi Ochiai<sup>3</sup> (1)Natl. Cancer Res. Ctr., Res. Inst., Dept. Immune Med., (2)Chugai Pharm. Co. Ltd., Discovey Tech., (3)Natl. Cancer Res. Ctr., EPOC)

膵がんにおける、がん関連間質線維芽細胞を中心とした免疫抑制性微小環境の分子基盤の解明

青木 一教<sup>1</sup>、福田 洋典<sup>1</sup>、山下 万貴子<sup>1</sup>、名取 修<sup>2</sup>、西藤 ゆかり<sup>2</sup>、水野 英明<sup>2</sup>、角田 浩行<sup>2</sup>、落合 淳志<sup>3</sup> (1)国立がん研セ・研・免疫創薬、(2)中外製薬(株)創薬基盤研究部、(3)国立がん研セ・先端医療開発セ)**J14-1-3 Withdrawn****J14-1-4 Reprogramming the desmoplastic microenvironment with p53 expression enhances oncolytic virotherapy in pancreatic cancer**Takeyoshi Nishiyama<sup>1</sup>, Hiroshi Tazawa<sup>1,2</sup>, Yoshinori Kajiwara<sup>1</sup>, Ryohei Shoji<sup>1</sup>, Yasuo Nagai<sup>1</sup>, Satoru Kikuchi<sup>1</sup>, Shinji Kuroda<sup>1,2</sup>, Kazuhiro Noma<sup>1</sup>, Ryuichi Yoshida<sup>1</sup>, Masahiko Nishizaki<sup>1</sup>, Hiroyoshi Y. Tanaka<sup>3</sup>, Mitsunobu R. Kano<sup>4</sup>, Yasuo Urata<sup>5</sup>, Shunsuke Kagawa<sup>1</sup>, Toshiyoshi Fujiwara<sup>1</sup> (1)Dept. Gastroenterological Surg., Okayama Univ. Grad. Sch. Med., (2)Ctr. for Innovative Clin. Med., Okayama Univ. Hosp., (3)Dept. Pharm. Biomed., Okayama Univ. Grad. Sch. Med., (4)Dept. Pharm. Biomed., Okayama Univ. Grad. Sch. Interdisciplinary Sci. Engineering, (5)Oncolys BioPharma Inc.)

p53 発現による線維性微小環境の再プログラム化は膵臓癌における腫瘍融解ウイルス療法の治療効果を増強する

西山 岳芳<sup>1</sup>、田澤 大<sup>1,2</sup>、梶原 義典<sup>1</sup>、庄司 良平<sup>1</sup>、永井 康雄<sup>1</sup>、菊地 寛次<sup>1</sup>、黒田 新士<sup>1,2</sup>、野間 和広<sup>1</sup>、吉田 龍一<sup>1</sup>、西崎 正彦<sup>1</sup>、田中 啓祥<sup>3</sup>、狩野 光伸<sup>4</sup>、浦田 泰生<sup>5</sup>、香川 俊輔<sup>1</sup>、藤原 俊義<sup>1</sup> (1)岡山大・院医歯薬・消化器外科、(2)岡山大・新医療研究開発セ、(3)岡山大・院医歯薬・医薬品臨床評価学、(4)岡山大・院ヘルス・医療技術臨床応用学、(5)オンコリスバイオファーマ(株))**J14-1-5 Pancreatic cancer progression via  $\beta 2$  adrenergic-neurotrophin feed forward loop**

Ryota Takahashi, Hideaki Ijichi, Kazuhiko Koike (Dept. Gastroenterology, Grad. Sch. of Med., The Univ. of Tokyo)

 $\beta 2$  アドレナリンシグナル-神経栄養因子フィードフォワードループによる膵臓癌進展機序

高橋 良太、伊地知 秀明、小池 和彦 (東京大・院医・消化器内科)

**J14-1-6 Radiogenomics: Machine learning from CT to predict the expression of ITGB1, and ITGAV in pancreatic cancer**Yosuke Iwatate<sup>1</sup>, Isamu Hoshino<sup>2</sup>, Fumitaka Ishige<sup>1</sup>, Naoki Kuwayama<sup>2</sup>, Yuki Nakamura<sup>3</sup>, Yasutoshi Tatsumi<sup>3</sup>, Osamu Shimozato<sup>3</sup>, Shingo Kagawa<sup>1</sup>, Hiroki Nagase<sup>3</sup> (1)Div. Hepato-Biliary-Pancreatic Surg., Chiba Cancer Ctr., (2)Div. Gastroenterological Surg., Chiba Cancer Ctr., (3)Lab. of Cancer Genetics, Chiba Cancer Ctr. Res. Inst.)

Radiogenomics 解析: 機械学習を用いた膵癌における画像的特徴量による ITGB1 および ITGAV の遺伝子異常発現および予後の予測

岩立 陽祐<sup>1</sup>、星野 敢<sup>2</sup>、石毛 文隆<sup>1</sup>、桑山 直樹<sup>2</sup>、中村 友紀<sup>3</sup>、巽 康年<sup>3</sup>、下里 修<sup>3</sup>、賀川 真吾<sup>1</sup>、永瀬 浩喜<sup>3</sup> (1)千葉県がんセ・肝胆膵外科、(2)千葉県がんセ・食道・胃腸外科、(3)千葉県がんセ・研・腫瘍ゲノム室)

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Kosuke Mima, Shigeki Nakagawa, Fumimasa Kitamura, Yoichi Yamashita, Hideo Baba (Dept. Gastroenterological Surg., Kumamoto Univ. Hosp.)

日常生活動作(activities of daily living; ADLs)が低下した肝細胞癌患者の臨床的特徴と予後の検討

美馬 浩介、中川 茂樹、北村 文優、山下 洋市、馬場 秀夫 (熊本大・院・消化器外科)

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肝細胞癌において血清中表皮型脂肪酸結合タンパク質は組織中発現レベルとは独立した予後不良因子である

大平 将史<sup>1</sup>、横尾 英樹<sup>2</sup>、小川 浩司<sup>3</sup>、深井 原<sup>1</sup>、神山 俊哉<sup>1</sup>、坂本 直哉<sup>3</sup>、武富 紹信<sup>1</sup> (<sup>1</sup>北海道大・消化器外科I、<sup>2</sup>旭川医大・外科、<sup>3</sup>北海道大・消化器内科)**J14-2-5 Targeting effect of the autologous platelet-based drug delivery system on hepatocellular carcinoma**Hiroyuki Tanaka<sup>1</sup>, Kie Horioka<sup>2</sup>, Masanori Goto<sup>1</sup>, Junichi Hitomi<sup>1</sup>, Yumiko Fujii<sup>1</sup>, Yuki Kamikokura<sup>1</sup>, Lingtong Meng<sup>1</sup>, Katsuhiko Ogawa<sup>3</sup>, Yuji Nishikawa<sup>1</sup> (<sup>1</sup>Div. Tumor Pathol., Dept. Pathol., Asahikawa Med. Univ., <sup>2</sup>Dept. Forensic Med., Int. Univ. Health Welfare, <sup>3</sup>Hokushinkai Megumino Hosp.)

自己血小板を用いたドラッグデリバリーシステムの肝細胞癌に対するターゲティング効果

田中 宏樹<sup>1</sup>、堀岡 希衣<sup>2</sup>、後藤 正憲<sup>1</sup>、人見 淳一<sup>1</sup>、藤井 裕美子<sup>1</sup>、上小倉 佑機<sup>1</sup>、孟 玲童<sup>1</sup>、小川 勝洋<sup>3</sup>、西川 祐司<sup>1</sup> (<sup>1</sup>旭川医大・病理学 腫瘍病理、<sup>2</sup>国際医療福祉大・法医学、<sup>3</sup>医療法人北農会恵み野病院)**J14-2-6 Temporal omics profiling using a mouse model of nonalcoholic steatohepatitis-associated hepatocellular carcinoma.**Yuichi Abe<sup>1</sup>, Masatoshi Ishigami<sup>2</sup>, Ayumu Taguchi<sup>1</sup> (<sup>1</sup>Aichi Cancer Ctr. Res. Inst., Div. Mol. Diagnosis, <sup>2</sup>Nagoya Uni. Grad. Sch. of Med., Div. Gastroenterol.)

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Liquid biopsyを用いた胆管癌Kras mutationの検出

神田 知洋<sup>1</sup>、山田 岳史<sup>2</sup>、宮坂 俊光<sup>2</sup>、松下 晃<sup>2</sup>、上田 純志<sup>2</sup>、古木 裕康<sup>1</sup>、上田 康二<sup>2</sup>、栗山 翔<sup>2</sup>、牧野 浩二<sup>1</sup>、吉田 寛<sup>2</sup> (日本医大・多摩永山病院・外科、<sup>2</sup>日本医大・付属病院・消化器外科)**J14-3-3 Examination of SPARC expression in fibroblasts surrounding biliary tract cancer**

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Regnase-1発現低下は肝内胆管癌の病態形成に寄与する

佐藤 悠、小玉 尚宏、疋田 隼人、阪森 亮太郎、巽 智秀、竹原 徹郎 (大阪大・院・消化器内科学)

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膵外分泌機能を評価し膵がんリスク集団を層別化する血液バイオマーカー開発

本田 一文<sup>1</sup>、小林 隆<sup>2</sup>、吉田 優<sup>2</sup> (日本医大・生体機能制御学、<sup>2</sup>神戸大・消化器内科)**J14-3-6 Patient-derived orthotopic pancreatic cancer tissue xenografts recapitulate remote metastasis**Kumiko Miyashita<sup>1</sup>, Makoto Miyoshi<sup>1</sup>, Kazuya Shimizu<sup>1,2</sup>, Akari Kawano<sup>1</sup>, Yuichi Hori<sup>1</sup> (<sup>1</sup>Kobe Univ. Grad. Sch. of Health Sci., <sup>2</sup>Natl. Hosp. Organization Kobe Med. Ctr.)

ヒト膵癌患者由来腫瘍片の同所性異種移植は高い頻度で遠隔転移を再現できる

宮下 久美子<sup>1</sup>、三好 真琴<sup>1</sup>、清水 一也<sup>1,2</sup>、河野 朱莉<sup>1</sup>、堀 裕一<sup>1</sup> (神戸大・保健学研究科、<sup>2</sup>神戸医療セ)

J7-1

**Cancer genome/genetics (1)**  
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座長: 島村 徹平 (名古屋大・院医)

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**赤白血病におけるゲノム解析と治療標的の検討**

竹田 淳恵<sup>1</sup>、吉田 健一<sup>1</sup>、依田 成玄<sup>1</sup>、南谷 泰仁<sup>1</sup>、越智 陽太郎<sup>1</sup>、中川 正宏<sup>1</sup>、佐伯 龍之介<sup>1</sup>、白石 友一<sup>2</sup>、永田 安伸<sup>3</sup>、高折 晃史<sup>4</sup>、千葉 滋<sup>5</sup>、片岡 圭亮<sup>6</sup>、宮野 悟<sup>6</sup>、牧島 秀樹<sup>1</sup>、小川 誠司<sup>1,6,7</sup> (京都大・医学研究科腫瘍生物学講座、<sup>2</sup>東京大・医科研・ヒトゲノム解析セ、<sup>3</sup>クリーブランドクリニック、<sup>4</sup>京都大・血液内科、<sup>5</sup>筑波大・血液内科、<sup>6</sup>カロリンスカ研・血液再生医学部門、<sup>7</sup>京都大・高等研究院ヒト生物学高等研究拠点)

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横島 健一<sup>1</sup>、末原 泰人<sup>2</sup>、日下部 学<sup>2,3</sup>、千葉 滋<sup>2,3</sup>、坂田 (柳) 麻美子<sup>2,3</sup> (<sup>1</sup>筑波大・院疾患制御医学専攻血液内科、<sup>2</sup>筑波大・附属病院血液内科、<sup>3</sup>筑波大・医学医療系血液内科)

**J7-1-3 Development of a novel single cell sequencing method from blood smears and pathological specimens**

Moe Higashitani<sup>1</sup>, Hidemasa Matsuo<sup>1</sup>, Yutarou Harata<sup>1</sup>, Yuri Ito<sup>1</sup>, Aina Inagami<sup>1</sup>, Nana Ito<sup>1</sup>, Norimitsu Uza<sup>2</sup>, Masahiro Shiokawa<sup>2</sup>, Masashi Kanai<sup>3</sup>, Manabu Muto<sup>3</sup>, Souichi Adachi<sup>1</sup> (<sup>1</sup>Human Health Sci., Kyoto Univ., <sup>2</sup>Dept. Gastroenterology & Hepatology, Kyoto Univ., <sup>3</sup>Dept. Therap. Oncology, Kyoto Univ.)

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東谷 萌絵<sup>1</sup>、松尾 英将<sup>1</sup>、原田 優太郎<sup>1</sup>、伊東 優里<sup>1</sup>、稲上 愛菜<sup>1</sup>、伊藤 菜々<sup>1</sup>、宇座 徳光<sup>2</sup>、塩川 雅広<sup>2</sup>、金井 雅史<sup>3</sup>、武藤 学<sup>3</sup>、足立 壯一<sup>1</sup> (<sup>1</sup>京都大・院医・人間健康科学、<sup>2</sup>京都大・院医・消化器内科学、<sup>3</sup>京都大・院医・腫瘍薬物治療学)

**J7-1-4 DNA enrichment in Duplex sequencing quantifies rare somatic mutations accumulated in normal tissues**

Sho Ueda<sup>1</sup>, Satoshi Yamashita<sup>1</sup>, Naoko Iida<sup>2</sup>, Yuichi Shiraishi<sup>2</sup>, Toshikazu Ushijima<sup>1</sup> (<sup>1</sup>Div. Epigenomics, Natl. Cancer Ctr. Res. Inst., <sup>2</sup>Div. Genome Analysis Platform Development, Natl. Cancer Ctr. Res. Inst.)

**濃縮 DNA を用いた Duplex sequencing 法による正常組織に蓄積した低頻度体細胞変異の定量**

上田 翔<sup>1</sup>、山下 聡<sup>1</sup>、飯田 直子<sup>2</sup>、白石 友一<sup>2</sup>、牛島 俊和<sup>1</sup> (国立がん研セ・研・エピゲノム、<sup>2</sup>国立がん研セ・研・ゲノム解析基盤開発)

**J7-1-5 Systematic discovery of single break-end using long-read data reveals complex structural variations in cancer genomes**

Yuichi Shiraishi<sup>1</sup>, Yasuhito Arai<sup>1</sup>, Naoko Iida<sup>2</sup>, Kenichi Chiba<sup>3</sup>, Keisuke Kataoka<sup>3</sup>, Tatsuhiro Shibata (Natl. Cancer Ctr. Res. Inst.)

**ロングリードを利用した後天的片側切断点の検出によるがんゲノムにおける複雑な構造異常の検出**

白石 友一、新井 康仁、飯田 直子、千葉 健一、片岡 圭亮、柴田 龍弘 (国立がん研セ・研)

**J7-1-6 Intratumor Heterogeneity and Clonal Evolution of Dedifferentiated Liposarcoma**

Tetsuya Sekita<sup>1,2</sup>, Naofumi Asano<sup>1,2</sup>, Takashi Kubo<sup>1,3</sup>, Hirohiko Totsuka<sup>4</sup>, Sachiyo Mitani<sup>1</sup>, Akihiko Yoshida<sup>5</sup>, Eisuke Kobayashi<sup>6</sup>, Motokiyo Komiyama<sup>7</sup>, Morio Matsumoto<sup>2</sup>, Masaya Nakamura<sup>2</sup>, Robert Nakayama<sup>2</sup>, Akira Kawai<sup>6</sup>, Hitoshi Ichikawa<sup>1</sup> (<sup>1</sup>Dept. Clin. Genomics, Natl. Cancer Ctr. Res. Inst., <sup>2</sup>Dept. Orthopaedic Surg., Keio Univ. Sch. of Med., <sup>3</sup>Dept. Lab. Med., Natl. Cancer Ctr. Hosp., <sup>4</sup>StaGen, <sup>5</sup>Dept. Diagnostic Path., Natl. Cancer Ctr. Hosp., <sup>6</sup>Dept. Musculoskeletal Oncology, Natl. Cancer Ctr. Hosp., <sup>7</sup>Dept. Urology, Natl. Cancer Ctr. Hosp.)

**脱分化型脂肪肉腫における腫瘍内不均一性とクローン進化**

関田 哲也<sup>1,2</sup>、浅野 尚文<sup>1,2</sup>、久保 崇<sup>1,3</sup>、戸塚 裕彦<sup>4</sup>、三谷 幸代<sup>1</sup>、吉田 朗彦<sup>5</sup>、小林 英介<sup>6</sup>、込山 元清<sup>7</sup>、松本 守雄<sup>2</sup>、中村 雅也<sup>2</sup>、中山 ロバート<sup>2</sup>、川井 章<sup>6</sup>、市川 仁<sup>1</sup> (国立がん研セ・臨床ゲノム解析部門、<sup>2</sup>慶應大・医・整形外科、<sup>3</sup>国立がん研セ・中央病院・臨床検査科、<sup>4</sup>スタージェン、<sup>5</sup>国立がん研セ・中央病院・病理診断科、<sup>6</sup>国立がん研セ・中央病院・骨軟部腫瘍、<sup>7</sup>国立がん研セ・中央病院・泌尿器科)

**J7-2 Cancer genome/genetics (2)**  
 がんゲノム・遺伝学 (2)

Chairperson: Masahito Kawazu (Natl. Cancer Ctr. Res. Inst.)

座長: 河津 正人 (国立がん研セ・研)

**J7-2-1 Large-scale genomic analysis shows different genes contribute to the histology of renal cell carcinoma.**

Yuya Sekine<sup>1,2</sup>, Makoto Hirata<sup>3,6</sup>, Koichi Matsuda<sup>4</sup>, Kokichi Sugano<sup>3,5</sup>, Teruhiko Yoshida<sup>3</sup>, Yoshinori Murakami<sup>6</sup>, Tomohiro Fukui<sup>7</sup>, Shusuke Akamatsu<sup>7</sup>, Osamu Ogawa<sup>7</sup>, Hidewaki Nakagawa<sup>8</sup>, Kazuyuki Numakura<sup>7</sup>, Shintaro Narita<sup>7</sup>, Tomonori Habuchi<sup>2</sup>, Yukihide Momozawa<sup>1</sup> (<sup>1</sup>Lab. for Genotyping Development, RIKEN Ctr. for Integrative Med. Sci., <sup>2</sup>Dept. Urology, Akita Univ. Grad. Sch. of Med., <sup>3</sup>Dept. Genetic Med. & Services, Natl. Cancer Ctr. Hosp., <sup>4</sup>Lab. Clin. Seq. Grad. Schl. Frontier Sci., The Univ. Tokyo, <sup>5</sup>Oncogene Res. Unit/Cancer Prevention Unit, Tochigi Cancer Ctr., <sup>6</sup>Div. Mol. Path., Inst. Med. Sci., The Univ. of Tokyo, <sup>7</sup>Dept. Urology, Kyoto Univ. Grad. Sch. of Med., <sup>8</sup>Lab. for Cancer Genomics, RIKEN Ctr. for Integrative Med. Sci.)

腎細胞がんの組織型によって寄与する遺伝子が異なることを示した大規模ゲノム解析

関根 悠哉<sup>1,2</sup>、平田 真<sup>3,6</sup>、松田 浩一<sup>4</sup>、菅野 康吉<sup>3,5</sup>、吉田 輝彦<sup>3</sup>、村上 善則<sup>6</sup>、福井 智洋<sup>7</sup>、赤松 秀輔<sup>7</sup>、小川 修<sup>7</sup>、中川 英刀<sup>8</sup>、沼倉 一幸<sup>2</sup>、成田 伸太郎<sup>2</sup>、羽瀧 友則<sup>2</sup>、桃沢 幸秀<sup>1</sup> (<sup>1</sup>理研・IMS・基盤技術開発研究チーム、<sup>2</sup>秋田大・院医・腎泌尿器科学講座、<sup>3</sup>国立がん研セ・中央病院・遺伝子診療部門、<sup>4</sup>東京大・新領域・クリニカルシーケンス、<sup>5</sup>栃木県がんセ・がん予防遺伝学カウンセリング、<sup>6</sup>東京大・医科研・人癌病因遺伝子、<sup>7</sup>京都大・院医・泌尿器科学、<sup>8</sup>理研・IMS・がんゲノム研究チーム)

**J7-2-2 Genomic analysis of single cell-derived organoids of normal kidney**

Kosuke Ieiri<sup>1,2</sup>, Yoichi Fujii<sup>1</sup>, Nobuyuki Kakiuchi<sup>1</sup>, Tomonori Hirano<sup>1</sup>, Tomomi Nishimura<sup>1</sup>, Hirona Maeda<sup>1</sup>, Tatsuki Ogasawara<sup>1</sup>, Yoshikage Inoue<sup>1</sup>, Eiji Kashiwagi<sup>2</sup>, Masahiro Nakagawa<sup>1</sup>, Masaki Shiota<sup>2</sup>, Junichi Inokuchi<sup>2</sup>, Hideki Makishima<sup>1</sup>, Seiya Imoto<sup>3</sup>, Masatoshi Eto<sup>3</sup>, Seishi Ogawa<sup>1</sup> (<sup>1</sup>Dept. Path. & Tumor Biol. Kyoto Univ., <sup>2</sup>Dept. Urology Grad. Sch. of Med. Sci. Kyushu Univ., <sup>3</sup>Lab. of Sequence Analysis Human Genome Ctr.)

正常腎オルガノイドを用いた単一細胞レベルでの遺伝子変異解析

家入 康輔<sup>1,2</sup>、藤井 陽一<sup>1</sup>、垣内 伸之<sup>1</sup>、平野 智紀<sup>1</sup>、西村 友美<sup>1</sup>、前田 紘奈<sup>1</sup>、小笠原 辰樹<sup>1</sup>、井上 善景<sup>1</sup>、柏木 英志<sup>2</sup>、中川 正宏<sup>1</sup>、塩田 真己<sup>2</sup>、猪口 淳一<sup>2</sup>、牧島 秀樹<sup>1</sup>、井元 清哉<sup>3</sup>、江藤 正俊<sup>2</sup>、小川 誠司<sup>1</sup> (<sup>1</sup>京都大・院医・腫瘍生物学講座、<sup>2</sup>九州大・院医・泌尿器分野、<sup>3</sup>東京大・ヒトゲノム解析セ)

**J7-2-3 A comparative study of MSI and IHC tests in Japanese gastric cancer.**

Gou Yamamoto<sup>1</sup>, Yoshiko Arai<sup>1</sup>, Tomio Arai<sup>2</sup>, Hideyuki Ishida<sup>3</sup>, Kiwamu Akagi<sup>1</sup> (<sup>1</sup>Dept. Mol. Diag. Cancer Prev., Saitama Cancer Ctr., <sup>2</sup>Dept. Pathol., Tokyo Metr. Geriat. Hosp., <sup>3</sup>Dept. Surg. Saitama Med. Ctr., Saitama Med. Univ.)

日本人の胃がんにおける MSI 検査と IHC 検査の比較検討

山本 剛<sup>1</sup>、新井 吉子<sup>1</sup>、新井 富生<sup>2</sup>、石田 秀行<sup>3</sup>、赤木 究<sup>1</sup> (<sup>1</sup>埼玉県がんセ・腫瘍診断・予防科、<sup>2</sup>東京都健康長寿医療セ・病理診断科、<sup>3</sup>埼玉医大・総合医療セ・外科)

**J7-2-4 Multi-omics analysis of patients with decreased MEN1 expression in 7,000 Japanese cancer patients**

Akane Naruoka<sup>1</sup>, Sumiko Ohnami<sup>2</sup>, Takeshi Nagashima<sup>2,3</sup>, Keiichi Ohshima<sup>1,4</sup>, Masakuni Serizawa<sup>4</sup>, Shumpei Ohnami<sup>2</sup>, Yasue Horiuchi<sup>2</sup>, Kenichi Urakami<sup>2</sup>, Yasuto Akiyama<sup>5</sup>, Ken Yamaguchi<sup>6</sup> (<sup>1</sup>Drug Discovery & Development Div. Shizuoka Cancer Ctr. Res. Inst., <sup>2</sup>Cancer Diagnostics Res. Div., Shizuoka Cancer Ctr. Res. Inst., <sup>3</sup>SRL Inc., <sup>4</sup>Med. Genetics Div. Shizuoka Cancer Ctr. Res. Inst., <sup>5</sup>Immunother. Div. Shizuoka Cancer Ctr. Res. Inst., <sup>6</sup>Shizuoka Cancer Ctr.)

日本人がん患者 7000 症例における MEN1 遺伝子低発現症例のマルチオミクス解析

成岡 茜<sup>1</sup>、大浪 澄子<sup>2</sup>、長嶋 剛史<sup>2,3</sup>、大島 啓一<sup>1,4</sup>、芹沢 昌邦<sup>4</sup>、大浪 俊平<sup>2</sup>、堀内 泰江<sup>2</sup>、浦上 研一<sup>2</sup>、秋山 靖人<sup>5</sup>、山口 建<sup>6</sup> (<sup>1</sup>静岡がんセ・研・新規薬剤開発評価、<sup>2</sup>静岡がんセ・研・診断技術開発、<sup>3</sup>(株) エスアールエル、<sup>4</sup>静岡がんセ・研・遺伝子診療、<sup>5</sup>静岡がんセ・研・免疫治療、<sup>6</sup>静岡がんセ)

**J7-2-5 Novel candidates of pathogenic variants of the BRCA1 and BRCA2 genes from a dataset of 3,552 Japanese whole genome**

Jun Yasuda, Shin Ito (Div. Mol. & Cell. Oncology, Miyagi Can. Cen. Res. Inst.)

日本人全ゲノム 3,552 人分の多型情報にある BRCA1 および BRCA2 遺伝子の病原性バリエーションの新規候補  
安田 純、伊藤 信 (宮城県がんセ・研・発がん制御)

**J7-2-6 Importance of presumed germline pathogenic variants and genetic support after tumor-only sequencing**

Miyuki Kawamura<sup>1</sup>, Koji Matsumoto<sup>1</sup>, Mitsunori Morita<sup>1</sup>, Hideki Sakai<sup>1</sup>, Takuma Onoe<sup>1</sup>, Yusaku Urakawa<sup>5,6</sup>, Hiromi Sugawara<sup>4</sup>, Sayaka Ueno<sup>2</sup>, Tamotsu Sudo<sup>2,3</sup> (<sup>1</sup>Dept. Med. Oncology, HCC, <sup>2</sup>Dept. Translational Res., HCC, <sup>3</sup>Dept. Clin. Ctr. for Cancer Genomics & Clin. Res., HCC, <sup>4</sup>Dept. Clin. Genetics, HCC, <sup>5</sup>Dept. Clin. Genomic, Dent. & Pharm. Sci., Okayama Univ., <sup>6</sup>Dept. Med. Oncology, Kobe City Med. Ctr. General Hosp.)

がん遺伝子パネル検査における PGPV と遺伝学的支援の重要性について

河村 美由紀<sup>1</sup>、松本 光史<sup>1</sup>、森田 充紀<sup>1</sup>、境 秀樹<sup>1</sup>、尾上 琢磨<sup>1</sup>、浦川 優作<sup>5,6</sup>、菅原 宏美<sup>4</sup>、植野 さやか<sup>2</sup>、須藤 保<sup>2,3</sup> (<sup>1</sup>兵庫県がんセ・腫瘍内科、<sup>2</sup>兵庫県がんセ・研究部、<sup>3</sup>兵庫県がんセ・ゲ医臨床試セ、<sup>4</sup>兵庫県がんセ・遺伝診療科、<sup>5</sup>岡山大・医歯薬学総合・臨床遺伝子医療学、<sup>6</sup>神戸市立医療セ・中央市民病院・腫瘍内科)

Room 13 Sep. 30 (Thu.) 9:00-10:15

J

**J15-1** **Diagnosis (1)**  
診断 (1)Chairperson: Hiroshi Harada (Grad. Sch. of Biostudies, Kyoto Univ.)  
座長: 原田 浩 (京都大・院生命科学)**J15-1-1** **Recently increased impact of unenhanced magnetic resonance imaging (MRI) to detect very small hepatocellular carcinoma**  
Kazuo Tarao (Tarao's Gastroenterological Clinic)小肝癌 (直径 2cm 以下) 拾い上げにおける最近の単純 MRI の進歩  
多羅尾 和郎 (たらお内科・消化器科)**J15-1-2** **Application of pH-activatable photoacoustic imaging agents in cancer imaging.**Koki Tsuchiya<sup>1</sup>, Hideo Takakura<sup>1</sup>, Yusuke Notsuka<sup>2</sup>, Yoshihisa Yamaoka<sup>2</sup>, Mikako Ogawa<sup>1</sup> (<sup>1</sup>Grad. Sch. of Pharm. Sci., Hokkaido Univ., <sup>2</sup>Grad. Sch. of Engineering, Saga Univ.)pH 応答性光音響イメージング剤のがんイメージングへの応用  
土屋 光輝<sup>1</sup>、高倉 栄男<sup>1</sup>、能塚 雄介<sup>2</sup>、山岡 禎久<sup>2</sup>、小川 美香子<sup>1</sup>  
(<sup>1</sup>北海道大・薬、<sup>2</sup>佐賀大・工学系研究科)**J15-1-3** **In vivo label-free observation of tumor-related blood vessels in small animals using a photoacoustic 3D imaging system**Yasufumi Asao<sup>1</sup>, Kenichi Nagae<sup>1</sup>, Takayuki Yagi<sup>1</sup>, Sadakazu Aiso<sup>1,3</sup>, Shigeaki Watanabe<sup>2</sup>, Marika Sato<sup>2</sup>, Shinae Kondoh<sup>2</sup>, Yukari Nakajima<sup>3</sup>, Kazuo Kishi<sup>3</sup> (<sup>1</sup>Luxonus Inc., <sup>2</sup>Sch. of Life Sci. & Tech., Tokyo Inst. of Tech., <sup>3</sup>Keio Univ. Sch. of Med.)

光超音波 3D イメージングシステムを用いた小動物の腫瘍関連血管の非造影 in vivo 観察

浅尾 恭史<sup>1</sup>、長永 兼一<sup>1</sup>、八木 隆行<sup>1</sup>、相磯 貞和<sup>1,3</sup>、渡邊 重明<sup>2</sup>、佐藤 満里花<sup>2</sup>、近藤 科江<sup>2</sup>、中島 由佳理<sup>3</sup>、貴志 和夫<sup>3</sup> (<sup>1</sup> (株) Luxonus、<sup>2</sup>東工大・生命理工、<sup>3</sup>慶應大・医)**J15-1-4** **Investigation of acidic free-glycans in urine and their alteration in cancer**Yasuhide Miyamoto<sup>1</sup>, Ken Hanzawa<sup>1</sup>, Miki Okamoto<sup>1</sup>, Mikio Mukai<sup>2</sup>, Hidenori Takahashi<sup>3</sup>, Takeshi Omori<sup>3</sup>, Kenji Ikezawa<sup>4</sup>, Kazuyoshi Ohkawa<sup>4</sup>, Masayuki Ohue<sup>3</sup> (<sup>1</sup>OICI. Dept. Mol. Biol., <sup>2</sup>OICI. Dept. Med. Checkup., <sup>3</sup>OICI. Dept. Gastro. Surg., <sup>4</sup>OICI. Dept. Hepato. Panc. Oncol.)

尿中の酸性遊離糖と癌におけるそれらの変化の検討

宮本 泰豪<sup>1</sup>、半澤 健<sup>1</sup>、岡本 三紀<sup>1</sup>、向井 幹夫<sup>2</sup>、高橋 秀典<sup>3</sup>、大森 健<sup>3</sup>、池澤 賢治<sup>4</sup>、大川 和良<sup>4</sup>、大植 雅之<sup>3</sup> (<sup>1</sup>大阪国際がんセ、分子生物学、<sup>2</sup>大阪国際がんセ、成人病ドック、<sup>3</sup>大阪国際がんセ、消化器外科、<sup>4</sup>大阪国際がんセ、肝胆膵内科)**J15-1-5** **Withdrawn****J15-1-6** **Prediction of tumor immune microenvironment using oxygen saturation endoscopic imaging**Daiki Sato<sup>1</sup>, Shohei Koyama<sup>2</sup>, Shogo Kumagai<sup>2</sup>, Atsuo Sai<sup>2</sup>, Hironori Sunakawa<sup>1</sup>, Daisuke Kotani<sup>3</sup>, Akihito Kawazoe<sup>3</sup>, Shingo Sakashita<sup>4</sup>, Yusuke Yoda<sup>1</sup>, Kohei Shitara<sup>3</sup>, Takeshi Kuwata<sup>1</sup>, Hiroyoshi Nishikawa<sup>3</sup>, Tomonori Yano<sup>1</sup> (<sup>1</sup>Dept. Gastroenterology & Endoscopy, NCCHE, <sup>2</sup>Div. Cancer Immunol., EPOC, NCC, <sup>3</sup>Dept. Gastroenterology & Gastrointestinal Oncology, NCCHE, <sup>4</sup>Exploratory Oncology Res. & Clin. Trial Ctr., Natl. Cancer Ctr.)

酸素飽和度イメージング内視鏡による腫瘍免疫微小環境の予測

佐藤 大幹<sup>1</sup>、小山 正平<sup>2</sup>、熊谷 尚悟<sup>2</sup>、佐井 篤雄<sup>2</sup>、砂川 弘憲<sup>1</sup>、小谷 大輔<sup>3</sup>、川添 彬人<sup>3</sup>、坂下 信悟<sup>4</sup>、依田 雄介<sup>1</sup>、設楽 紘平<sup>3</sup>、桑田 健<sup>4</sup>、西川 博嘉<sup>2</sup>、矢野 友規<sup>1</sup> (<sup>1</sup>国立がん研セ・東病院・消化管内視鏡科、<sup>2</sup>国立がん研セ・EPOC 免疫 TR 分野、<sup>3</sup>国立がん研セ・東病院・消化管内科、<sup>4</sup>国立がん研セ・先端医療開発セ)

Room 13 Sep. 30 (Thu.) 10:15-11:30

J

**J15-2** **Diagnosis (2)**  
診断 (2)

Chairperson: Masashi Idogawa (Dept. Med. Genome Sci., Inst. for Frontier Med., Sapporo Med. Univ.)

座長: 井戸川 雅史 (札幌医大・フロンティア医学・ゲノム医科学)

**J15-2-1** **Multiplex digital PCR assay to capture multiple mutations by target enrichment using minimal amount of residual specimen**  
Chiho Maeda<sup>1</sup>, Yusuke Ono<sup>1,2</sup>, Kenji Takahashi<sup>2</sup>, Yusuke Mizukami<sup>1,2</sup> (<sup>1</sup>Inst. Biomed. Res., Sapporo Higashi Tokushukai Hosp., <sup>2</sup>Dept. Med., Asahikawa Med. Univ.)

臨床残余検体を用いた遺伝子変異検出のためのマルチプレックスデジタル PCR 前増幅法の確立

前田 知歩<sup>1</sup>、小野 裕介<sup>1,2</sup>、高橋 賢治<sup>2</sup>、水上 裕輔<sup>1,2</sup> (<sup>1</sup>札幌東徳洲会病院・医学研、<sup>2</sup>旭川医大・内科学)**J15-2-2** **Landscaping of copy number alteration using digital MLPA in malignant mesothelioma; correlation with patient's prognosis**Yoshie Yoshikawa<sup>1</sup>, Mitsuru Emi<sup>1</sup>, Kazue Yoneda<sup>1</sup>, Masaki Ohmura<sup>1</sup>, Masaki Hashimoto<sup>2</sup>, Nobuyuki Kondo<sup>3</sup>, Ayuko Sato<sup>3</sup>, Seiki Hasegawa<sup>2</sup>, Tooru Tsujimura<sup>3</sup> (<sup>1</sup>Dept. Genetics, Hyogo College of Med., <sup>2</sup>Dept. Thoracic Surg., Hyogo College of Med., <sup>3</sup>Dept. Path., Hyogo College of Med.)

デジタル MLPA で検出される悪性中皮腫のゲノムコピー数変化と患者予後との関連解析

吉川 良恵<sup>1</sup>、江見 充<sup>1</sup>、米田 和恵<sup>1</sup>、大村谷 昌樹<sup>1</sup>、橋本 昌樹<sup>2</sup>、近藤 展行<sup>2</sup>、佐藤 鮎子<sup>3</sup>、長谷川 誠紀<sup>2</sup>、辻村 亨<sup>3</sup> (<sup>1</sup>兵庫医大・医・遺伝学、<sup>2</sup>兵庫医大・医・呼吸器外科、<sup>3</sup>兵庫医大・医・病理学)**J15-2-3** **Aberrant expression of MYD88 via RNA-controlling CNOT4 and EXOSC3 in normal mucosa influences onset of colonic cancer**Masumi Tsuda<sup>1,2</sup>, Lei Wang<sup>1,2</sup>, Satoshi Hirano<sup>3</sup>, Masahiro Asaka<sup>4</sup>, Shinya Tanaka<sup>1,2</sup> (<sup>1</sup>Dept. Cancer Path., Fac. of Med., Hokkaido Univ., <sup>2</sup>WPI-ICReDD, Hokkaido Univ., <sup>3</sup>Dept. Gastroenterol. Surg. II., Fac. of Med., Hokkaido Univ., <sup>4</sup>Health Sci. Univ. of Hokkaido)

大腸正常粘膜において RNA 制御分子 CNOT4 および EXOSC3 を介した MYD88 の発現亢進は大腸癌の発生に関与する

津田 真寿美<sup>1,2</sup>、王 磊<sup>1,2</sup>、平野 聡<sup>3</sup>、浅香 正博<sup>4</sup>、田中 伸哉<sup>1,2</sup> (<sup>1</sup>北海道大・院医・腫瘍病理、<sup>2</sup>北海道大・化学反応創成研究拠点、<sup>3</sup>北海道大・院医・消化器外科学 II、<sup>4</sup>北海道医療大)**J15-2-4** **Discovery of novel biomarkers of small cell lung cancer by proteomics of exosomes.**

Yasuhiko Suga, Hanako Yoshimura, Kotaro Miyake, Izumi Nagatomo, Yoshito Takeda, Atsushi Kumanogoh (Dept. Respiratory Med. &amp; Clin. Immunol., Osaka Univ.)

エクソソームを用いた小細胞肺癌における新規バイオマーカー探索  
菅 泰彦、吉村 華子、三宅 浩太郎、長友 泉、武田 吉人、熊ノ郷 淳  
(大阪大・医・呼吸器免疫内科学)**J15-2-5** **A pilot study to evaluate the efficacy of a novel three-dimensional deformable microfilter with a DNA aptamer for CTCs**Masaaki Iwatsuki<sup>1</sup>, Yuta Nakashima<sup>2</sup>, Yusuke Kitamura<sup>2</sup>, Keiichiro Yasuda<sup>3</sup>, Hideo Baba<sup>1</sup> (<sup>1</sup>Dept. Gastroenterological Surg. Kumamoto Univ., <sup>2</sup>Facul. of Advanced Sci. & Techno. Kumamoto Univ., <sup>3</sup>Ogic Technologies Co., Ltd.)

3次元マイクロフィルターを用いた CTC の検出(pilot study)

岩槻 政晃<sup>1</sup>、中島 雄太<sup>2</sup>、北村 裕介<sup>2</sup>、安田 敬一郎<sup>3</sup>、馬場 秀夫<sup>1</sup>  
(<sup>1</sup>熊本大・消化器外科、<sup>2</sup>熊本大・先端科学研究部 (工学系)、<sup>3</sup> (株) オジックテクノロジーズ)**J15-2-6** **Identification of novel prognosticator gene in malignant pancreatic cancer**Shoichiro Tange<sup>1</sup>, Tomomi Hirano<sup>1</sup>, Masashi Idogawa<sup>1</sup>, Eishu Hirata<sup>2</sup>, Issei Imoto<sup>3</sup>, Takashi Tokino<sup>1</sup> (<sup>1</sup>Med. Genome Sci., Inst. Frontier Med., Sapporo Med. Univ., <sup>2</sup>Kanazawa Univ. Cancer Res. Inst. Div. Tumor Cell Biol., <sup>3</sup>Aichi Cancer Ctr. Res. Inst.)

膵臓がんにおける新規予後予測遺伝子の機能解析

丹下 正一郎<sup>1</sup>、平野 朋美<sup>1</sup>、井戸川 雅史<sup>1</sup>、平田 英周<sup>2</sup>、井本 逸勢<sup>3</sup>、時野 隆至<sup>1</sup> (<sup>1</sup>札幌医大・フロンティア医学・ゲノム医科学、<sup>2</sup>金沢大・がん研・腫瘍分子生物学、<sup>3</sup>愛知県がんセ・研)

## S3 Development of cancer immunotherapy for precision medicine

がん免疫療法のプレジジョン医療への展開

Chairpersons: Hiroyoshi Nishikawa (Dept. Immunol., Nagoya Univ. Grad. Sch. of Medicine/ Div. Cancer Immunol., Res. Institute/ Exploratory Oncology Res. & Clin. Trial Ctr.(EPOC), Natl. Cancer Ctr.)  
Kazuma Kiyotani (Cancer Precision Med. Ctr., JFCR)

座長：西川 博嘉 (名古屋大・院医・微生物・免疫学講座 分子細胞免疫学/国立がん研セ・研・腫瘍免疫研究分野/先端医療開発セ・免疫トランスレショナルリサーチ (TR) 分野)

清谷 一馬 ((公財) がん研・がんプレジジョン医療研究セ)

Immunotherapy has become one of the standard cancer therapies in various types of cancer, yet, more than half of treated patients fail to respond to the therapy, even in combination. It is therefore necessary to identify predictive biomarkers that can stratify responders from non-responders and to develop more effective cancer immunotherapeutic strategies via the detailed analyses of immune responses in patients. According to the theory of Cancer Immunoeediting, clinical cancer is developed via selecting cancer cells with low immunogenicity that are less susceptible to attack by the immune system and evading the immune system with multiple immune suppression mechanisms, resulting in the formation of immunologically diverse tumor microenvironments. In this symposium, we will discuss the importance of elucidating the characteristics of cancer cells in individual cancer patients by genome analysis and examining the immune response in an integrated manner, leading to the development of immune-precision medicine.

## S3-1 Screening of targetable neoantigens shared by multiple cancer patients

Kazuma Kiyotani, Yusuke Nakamura (Cancer Precision Med. Ctr., JFCR)

共通ネオオプテゲンのスクリーニング

清谷 一馬、中村 祐輔 ((公財) がん研・がんプレジジョン医療研究セ)

## S3-2 Tumor Antigen-specific CD4+ T cells and B cells in Human Cancers

Hideki Ueno<sup>1,2</sup> (1)Dept. Immunol, Grad. Sch. of Med., Kyoto Univ.,  
<sup>2</sup>ASHBi, Kyoto Univ.)

ヒトがんにおけるがん抗原特異的 CD4+T 細胞と B 細胞

上野 英樹<sup>1,2</sup> (1)京都大・医・免疫細胞生物学、<sup>2</sup>京都大・高等研究・院・ヒト生物学拠点)

## S3-3 T cell exhaustion and its reversion to stem cell memory T cells for cancer Immunotherapy

Akihiko Yoshimura, Setsuko Mise, Makoto Ando, Tanakorn Srirak (Dept. MicroBiol. & Immunol., Keio Univ. Sch. Med.)

がんの免疫療法における T 細胞の疲弊とその解除

吉村 昭彦、三瀬 節子、安藤 真、シリラト タナコーン (慶應大・医・微生物学免疫学教室)

## S3-4 Mechanisms of regulatory T cell infiltration in tumors: implications for innovative immune precision therapies

Shohei Koyama<sup>1,2</sup> (1)Exploratory Oncology Res. & Clin. Trial Ctr., Natl. Cancer Ctr.,  
<sup>2</sup>Osaka Univ. Grad. Sch. of Med.)

制御性 T 細胞が腫瘍に浸潤する機序を標的とした新規治療戦略の構築

小山 正平<sup>1,2</sup> (1)国立がん研セ・先端医療開発セ、<sup>2</sup>大阪大・院医)

## S3-5 Targeting regulatory T cells in cancer: from mechanisms to new therapies

Sergio Quezada (UCL Cancer Inst., Univ. College London)

## S3-6 Hyperactive NK cells in Rag2-deficient mice suppress the development of acute myeloid leukemia

Emi Sugimoto<sup>1</sup>, Susumu Goyama<sup>2</sup>, Shuhei Asada<sup>1</sup>, Yuta Kaito<sup>3</sup>, Yoichi Imai<sup>1</sup>, Tomofusa Fukuyama<sup>1</sup>, Yosuke Tanaka<sup>1</sup>, Toshio Kitamura<sup>1</sup> (1)Div. Cell. Therapy, IMSUT, The Univ. of Tokyo, <sup>2</sup>Div. Mol. Oncology, CBMS, The Univ. of Tokyo, <sup>3</sup>Dept. Hematology/Oncology, IMSUT Hosp, The Univ. of Tokyo)

Rag2 欠損マウスの高活性 NK 細胞が急性骨髄性白血病の発症を抑制する

杉本 絵美<sup>1</sup>、合山 進<sup>2</sup>、浅田 修平<sup>1</sup>、海渡 裕太<sup>3</sup>、今井 陽一<sup>3</sup>、福山 朋房<sup>1</sup>、田中 洋介<sup>1</sup>、北村 俊雄<sup>1</sup> (1)東京大・医科研・細胞療法分野、<sup>2</sup>東京大・CBMS 先進分子腫瘍学分野、<sup>3</sup>東京大・医科研・附属病院・血液腫瘍内科)

## S4 Evolving molecular targeted therapy

進化する分子標的治療

Chairpersons: Seiji Yano (Div. Med. Oncology, Cancer Res. Inst., Kanazawa Univ.)  
Ryohei Katayama (Div. Exp. Chemother., Cancer Chemother. Ctr., JFCR)

座長：矢野 聖二 (金沢大・がん進展制御研・腫瘍内科)

片山 量平 ((公財) がん研・化療セ・基礎研究部)

Molecular-targeted therapy has become the mainstay of cancer drug therapy and has evolved further. For example, development of inhibitors for KRAS, which has been considered undruggable, discovery of new targets and development of new inhibitors, development of drugs that overcome resistance, development of drugs that enhance the effects of other drugs such as immune checkpoint inhibitors, and repositioning have been attempted. Some of which have been successfully introduced in the clinic.

In this symposia, five distinguished speakers will present the latest research results of evolving molecular-targeted therapies. We would like many people to come and discuss.

## S4-1 Diverse drug resistance mechanisms and overcoming the resistance by drug repurposing

Ryohei Katayama<sup>1,2</sup>, Naoya Fujita<sup>3</sup> (1)Div. Exp. Chemother., Cancer Chemother. Ctr., JFCR, <sup>2</sup>Dept. CBMS, Grad. Sch. Front. Sci., The Univ. of Tokyo, <sup>3</sup>Cancer Chemother. Ctr., JFCR)

分子標的薬への薬剤耐性機構の多様性と耐性克服療法の探索

片山 量平<sup>1,2</sup>、藤田 直也<sup>3</sup> (1) (公財) がん研・化療セ・基礎研究部、<sup>2</sup>東京大・新領域・メディカル情報生命、<sup>3</sup> (公財) がん研・化療セ)

## S4-2 Prospects for the future target therapy to colorectal cancer

Hiromichi Ebi (Div. Mol. Ther. Aichi Cancer Ctr. Res. Ins.)

大腸がんに対する分子標的治療開発

衣妻 寛倫 (愛知県がんセ・がん標的治療 TR)

## S4-3 Combined immunotherapy with molecular targeted agents: anti-VEGF therapy and beyond

Junji Matsui (Eisai, Oncology Business Group)

免疫療法との併用による VEGF 標的治療薬開発の進展と展望

松井 順二 (エーザイ (株)・オンコロジー)

## S4-4 Perspectives of bi-specific antibodies in cancer treatment.

Byoungchul Cho (Yonsei Univ. College of Med.)

## S4-5 Resistance to targeted therapy stratified with oncogenes or tumor suppressor genes

Azusa Tanimoto<sup>1,2</sup>, Seiji Yano<sup>1</sup> (1)Div. Med. Oncology, Cancer Res. Inst., Kanazawa Univ., <sup>2</sup>MD Anderson Cancer Ctr., Thoracic Head & Neck Med. Oncology)

がん遺伝子とがん抑制遺伝子によって層別化される分子標的薬への耐性機構

谷本 梓<sup>1,2</sup>、矢野 聖二<sup>1</sup> (1)金沢大・がん進展制御研・腫瘍内科、<sup>2</sup>テキサス大・MD アンダーソンがんセ)

## S4-6 Discovery of actionable vulnerabilities in scirrhous-type gastric cancer

Yosuke Tanaka<sup>1</sup>, Fumiko Chiwaki<sup>2</sup>, Shinya Kojima<sup>1</sup>, Masahito Kawazu<sup>1</sup>, Masayuki Komatsu<sup>2</sup>, Toshihide Ueno<sup>1</sup>, Satoshi Inoue<sup>1</sup>, Shigeki Sekine<sup>3</sup>, Keisuke Matsusaki<sup>4</sup>, Hiromichi Matsushita<sup>5</sup>, Narikazu Boku<sup>6</sup>, Yae Kanai<sup>7</sup>, Yasushi Yatabe<sup>3</sup>, Hiroki Sasaki<sup>2</sup>, Hiroyuki Mano<sup>1</sup> (1)Div. Cell. Signaling, Natl. Cancer Ctr. Res. Inst., <sup>2</sup>Dept. Translational Oncology, Natl. Cancer Ctr. Res. Inst., <sup>3</sup>Dept. Diagnostic Path., Natl. Cancer Ctr. Hosp., <sup>4</sup>Kanamecho Hosp., <sup>5</sup>Dept. Lab. Med., Natl. Cancer Ctr. Hosp., <sup>6</sup>Div. Gastrointestinal Med. Oncology, Natl. Cancer Ctr. Hosp., <sup>7</sup>Dept. Path., Keio Univ. Sch. of Med.)

スキルス胃がんの治療標的発見

田中 庸介<sup>1</sup>、千脇 史子<sup>2</sup>、小島 進也<sup>1</sup>、河津 正人<sup>1</sup>、小松 将之<sup>2</sup>、上野 敏秀<sup>1</sup>、井上 聡<sup>1</sup>、関根 茂樹<sup>3</sup>、松崎 圭祐<sup>4</sup>、松下 弘道<sup>5</sup>、朴 成和<sup>6</sup>、金井 弥栄<sup>7</sup>、谷田部 恭<sup>3</sup>、佐々木 博己<sup>2</sup>、間野 博行<sup>1</sup> (1)国立がん研セ・研・細胞情報学、<sup>2</sup>国立がん研セ・研・シーズ探索、<sup>3</sup>国立がん研セ・中央病院・病理診断科、<sup>4</sup>要町病院、<sup>5</sup>国立がん研セ・中央病院・臨床検査科、<sup>6</sup>国立がん研セ・中央病院・消化管内科、<sup>7</sup>慶應大・医・病理学教室)

## Introduction Course for Current Cancer Research

Room 16 Sep. 30 (Thu.) 9:00-9:30

J

**IC1** **Biology and application of patient derived organoids**

Patient derived organoidsの基本と応用

Chairperson: Takuro Nakamura (Div. Carcinogenesis, Cancer Inst., JFCR)  
座長: 中村 卓郎 (がん研・研・発がん)**IC1** **Biology and application of patient derived organoids**

Ryoji Yao (Dept. Cell Biol., Cancer Inst., JFCR)

Patient derived organoidsの基本と応用

八尾 良司 (がん研・研・細胞生物)

## Introduction Course for Current Cancer Research

Room 16 Sep. 30 (Thu.) 9:40-10:10

J

**IC2** **Comprehensive analysis of human cancer on the basis of cohort and biobanks**

コホート、バイオバンクを基盤としたヒトがんの網羅的研究

Chairperson: Takuro Nakamura (Div. Carcinogenesis, Cancer Inst., JFCR)  
座長: 中村 卓郎 (がん研・研・発がん)**IC2** **Comprehensive analysis of human cancer on the basis of cohort and biobanks**Yoshinori Murakami<sup>1,2</sup> (<sup>1</sup>Div. Mol. Pathol., Inst. Med. Sci, UTokyo,  
<sup>2</sup>Proj. Div., Genomic Med., Disease Prevent., Inst. Med. Sci, UTokyo)

コホート、バイオバンクを基盤としたヒトがんの網羅的研究

村上 善則<sup>1,2</sup> (<sup>1</sup>東京大・医科研・人癌病因遺伝子、<sup>2</sup>東京大・医科研・ゲノム予防医学)

## Introduction Course for Current Cancer Research

Room 16 Sep. 30 (Thu.) 10:20-10:50

J

**IC3** **Technology for analyses in cancer immunology**

がん免疫とは何か：解析手法の基礎

Chairperson: Takuro Nakamura (Div. Carcinogenesis, Cancer Inst., JFCR)  
座長: 中村 卓郎 (がん研・研・発がん)**IC3** **Technology for analyses in cancer immunology**Yosuke Togashi<sup>1,2</sup> (<sup>1</sup>Okayama Univ., Grad. Sch. of Med., Dent. & Pharm.  
Sci., <sup>2</sup>Chiba Cancer Ctr. Res. Inst.)

がん免疫とは何か：解析手法の基礎

富樫 庸介<sup>1,2</sup> (<sup>1</sup>岡山大・院医歯薬、<sup>2</sup>千葉県がんセ・研)

## Introduction Course for Current Cancer Research

Room 16 Sep. 30 (Thu.) 11:00-11:30

J

**IC4** **Drug Discovery by Screening Compounds Targeting PPI Inhibition**

PPI阻害を標的とした化合物スクリーニングによる創薬

Chairperson: Takuro Nakamura (Div. Carcinogenesis, Cancer Inst., JFCR)  
座長: 中村 卓郎 (がん研・研・発がん)**IC4** **Drug Discovery by Screening Compounds Targeting PPI Inhibition**Hidenori Ichijo (The Lab. of Cell Signaling, Grad. Sch. of  
Pharmaceutical Sci., The Univ. of Tokyo)

PPI阻害を標的とした化合物スクリーニングによる創薬

一條 秀憲 (東京大・院薬・細胞情報学教室)

## Luncheon Seminars

### Room 2

#### LS-1 Eli Lilly Japan K.K. 日本イーライリリー株式会社

- 1) Treatment strategies for diversified driver gene mutation positive NSCLC • Diagnostic aspects
- 2) Treatment strategies for diversified driver gene mutation positive NSCLC • Clinical aspects

1) Kengo Takeuchi (Division of Pathology, Cancer Institute, Japanese Foundation for Cancer Research)

2) Makoto Nishio (Department of Thoracic Medical Oncology, The Cancer Institute Hospital, Japanese Foundation for Cancer Research)

Chair: Katsuyuki Kiura (Department of Allergy and Respiratory Medicine, Okayama University Hospital)

- 1) 多様化するドライバー遺伝子変異陽性 NSCLC の治療戦略・診断の観点から
  - 2) 多様化するドライバー遺伝子変異陽性 NSCLC の治療戦略・臨床の観点から
- 1) 竹内 賢吾 (がん研究会がん研究所 病理部)
  - 2) 西尾 誠人 (がん研究会有明病院 呼吸器内科)

座長：木浦 勝行 (岡山大学病院 呼吸器・アレルギー内科)

### Room 5

#### LS-4 Scrum Inc. 株式会社スクラム

#### Assay Solutions for Confident Decision Making in Targeted Therapeutics Development~ From high-throughput signaling protein expression analysis to immuno-cell killing assay~

Toru Hattori (Strategic Marketing Division, Scrum Inc.)

Chair: Tomoshi Takeya (Scrum Inc.)

#### 分子標的薬開発を迅速かつ確実に進めるための薬理アッセイ法のご紹介 ~セルベースのハイスループットタンパク質発現解析法からがん免疫キリングアッセイまで~

服部 徹 (株式会社スクラム マーケティング&学術部)

座長：掛谷 知志 (株式会社スクラム)

### Room 3

#### LS-2 Nippon Becton Dickinson Company, Ltd. 日本ベクトン・ディッキンソン株式会社

#### “Bedside to Bench and Back” – The Innovative Cancer Immunological Research by the High-Dimensional Single-Cell Analysis of Surgical Resected Samples

Hirofumi Akita (Department of Gastroenterological Surgery, Osaka International Cancer Institute)

Chair: Takuya Yamamoto (National Institutes of Biomedical Innovation, Health and Nutrition, Laboratory of Immunosenescence)

#### “Bedside-to-Bench and Back “ -外科的手法と高次免疫学的解析手法の融合が切り開く新しい癌免疫研究の展開-

秋田 裕史 (大阪国際がんセンター 消化器外科/隣がんセンター外科系部門/次世代がん医療開発センターがん病態解析室)

座長：山本 拓也 (国立研究開発法人 医薬基盤・健康・栄養研究所 免疫老化プロジェクト)

### Room 7

#### LS-5 Novocure Ltd. ノボキア株式会社

#### Tumor Treating Fields : from the Petri dish to the Patient

Moshe Giladi (Novocure Ltd.)

Chair: Hideo Nakamura (Department of Neurosurgery, Kurume University Hospital)

#### 腫瘍治療電場：ペトリ皿から患者へ

モシエ・ギラディ (ノボキア株式会社)

座長：中村 英夫 (久留米大学医学部 脳神経外科)

### Room 4

#### LS-3 SymBio Pharmaceuticals, Ltd. シンバイオ製薬株式会社

#### Treatment strategies for relapsed or refractory diffuse large B-cell lymphoma

Itaru Matsumura (Department of Hematology and Rheumatology, Kindai University Faculty of Medicine)

Chair: Akifumi Takaori (Department of Hematology/Oncology, Graduate School of Medicine, Kyoto University)

#### 再発/難治性びまん性大細胞型 B 細胞リンパ腫の治療戦略

松村 到 (近畿大学医学部 血液・膠原病内科)

座長：高折 晃史 (京都大学大学院医学研究科内科学講座 血液・腫瘍内科学)

### Room 8

#### LS-6 AstraZeneca K.K. アストラゼネカ株式会社

#### Cancer Precision Medicine in Prostate Cancer

Shusuke Akamatsu (Department of Urology, Kyoto University Graduate School of Medicine)

Chair: Hideaki Miyake (Department of Urology, Hamamatsu University School of Medicine)

#### Cancer Precision Medicine in Prostate Cancer

赤松 秀輔 (京都大学医学研究科 泌尿器科学教室)

座長：三宅 秀明 (浜松医科大学 泌尿器科学講座)



Room 9

**LS-7** Eisai Co., Ltd.  
 エーザイ株式会社

**Epigenetic abnormalities in B-cell lymphoma**

Momoko Nishikori (Department of Hematology and Oncology, Graduate School of Medicine, Kyoto University)

Chair: Koichi Akashi (Department of Medicine and Biosystemic Science, Graduate School of Medical Science, Kyushu University)

**B細胞リンパ腫におけるエピゲノム異常**

錦織 桃子 (京都大学大学院医学研究科 血液・腫瘍内科学)

座長: 赤司 浩一 (九州大学大学院医学研究院 病態修復内科学 (第一内科))

Room 13

**LS-10** Novartis Pharma K.K.  
 ノバルティス ファーマ株式会社

**Clinical practice in CAR-T cell therapy**

Jun Kato (Division of Hematology, Department of Medicine, Keio University School of Medicine)

Chair: Keisuke Kataoka (Division of Hematology, Department of Medicine, Keio University School of Medicine)

**CAR-T 細胞治療における臨床運用の実際**

加藤 淳 (慶應義塾大学医学部 血液内科)

座長: 片岡 圭亮 (慶應義塾大学医学部 血液内科)

Room 11

**LS-8** Leica Microsystems K.K.  
 ライカマイクロシステムズ株式会社

**1) Proteogenomics Analysis with LMD for Oncology  
 2) Cell DIVE Multiplex Imaging Solution for Precision Oncology**

- 1) Nobuhide Tsurumaki (Leica Microsystems K.K., LSR Division)
- 2) Toshiyuki Hatano (Leica Microsystems K.K., LSR Division)

Chair: Shintaro Tanaka (Leica Microsystems K.K., LSR Division)

**1) がん研究のための LMD を用いたプロテオゲノミクス解析  
 2) がん研究のためのマルチプレックスイメージングソリューション Cell DIVE**

- 1) 鶴巻 宣秀 (ライカマイクロシステムズ株式会社  
ライフサイエンス・リサーチ事業部)
- 2) 波田野 俊之 (ライカマイクロシステムズ株式会社  
ライフサイエンス・リサーチ事業部)

 座長: 田中 晋太郎 (ライカマイクロシステムズ株式会社  
ライフサイエンス・リサーチ事業部)

Room 15

**LS-11** Invitae Japan K.K.  
 Invitae Japan 株式会社

**Invitae Liquid Biopsy Solutions: LiquidPlex™ and Personalized Cancer Monitoring (PCM™)**

Vishal Sikri (Invitae corporation)

Chair: Nahoko Sakai (Invitae Japan K.K.)

**Invitae のリキッドバイオプシーソリューション: LiquidPlex™ と Personalized Cancer Monitoring (PCM™)**

Vishal Sikri (Invitae corporation)

座長: 酒井 名朋子 (Invitae Japan 株式会社)

Room 12

**LS-9** TAIHO PHARMACEUTICAL CO., LTD.  
 大鵬薬品工業株式会社

**Lung cancer chemotherapy updates**

Hiroyuki Yasuda (Division of Pulmonary Medicine, Keio University, School of Medicine)

Chair: Yukio Hosomi (Department of Thoracic Oncology and Respiratory Medicine, Tokyo Metropolitan Cancer and Infectious Diseases Center, Komagome Hospital, Tokyo, Japan)

**肺癌化学療法の進歩と課題克服に向けた多方面戦略**

安田 浩之 (慶應義塾大学医学部 呼吸器内科)

座長: 細見 幸生 (がん・感染症センター 東京都立駒込病院 呼吸器内科)

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Authors

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Chairpersons

CS2

### Single cell biology of human cancer —細胞解像度のがん生物学

Chairpersons: Hiroyuki Aburatani (Genome Sci. & Med., RCAST, Tokyo Univ.)  
Shumpei Ishikawa (The Univ. of Tokyo)

座長：油谷 浩幸 (東京大・先端研・ゲノムサイエンス)  
石川 俊平 (東京大)

Single-cell technology has revolutionized the biology of cancer. While the diversity of individual cancer cases has been demonstrated by genomic profiling, single-cell biology has revealed the heterogeneity of individual cancer cells within tumor tissues. Also, single-cell genomics, including spatial profiling, will accurately reveal the interaction among stromal cells, immune cells and cancer cells, leading to an overall picture of the cancer tissue homeostasis and the identification of potential intervening targets. Therefore, it will provide more accurate understanding on the mechanisms of tumor progression and treatment resistance, as it can clearly identify tumor-related transcriptional abnormalities in each cell type. In this Core Symposium 2, "Single Cell Resolution Cancer Biology", leading researchers from Japan and overseas are invited to present the cutting edge latest single-cell cancer analysis. We hope participants will have an opportunity to realize the impact and future potential of single-cell biology on cancer research and its translation.

#### CS2-1 Cancer cell states in human malignancies and their interactions with the tumor microenvironment

Itai Yanai<sup>1</sup>, Dalia Barkley<sup>1</sup>, Reuben Muncada<sup>1</sup>, Gregor Werba<sup>2,3</sup>, Wei Wang<sup>2,3</sup>, Maayan Baron<sup>1</sup>, Bo Xia<sup>1</sup>, Gustavo S. Franca<sup>1</sup>, Anjali Rao<sup>1</sup>, Alejandro Weil<sup>1</sup>, Iman Osman<sup>4,5</sup> (<sup>1</sup>Inst. for Computational Med., NYU Grossman Sch. of Med., <sup>2</sup>Dept. Surg., NYU Grossman Sch. of Med., <sup>3</sup>Dept. Path., NYU Grossman Sch. of Med., <sup>4</sup>Dept. Dermatology, NYU Grossman Sch. of Med., <sup>5</sup>Perlmutter Cancer Ctr., NYU Grossman Sch. of Med.)

#### CS2-2 Heterogeneity in glioma dissected by single cell RNA-seq

Itay Tirosh (Dept. Mol. Cell Biol., Weizmann Inst. of Sci., Israel)

#### CS2-3 Distinct properties of tumor-infiltrating immune cells across multiple cancer types

Zemin Zhang (BioMed. Pioneering Innovation Ctr., Peking Univ., Beijing, China)

#### CS2-4 Epigenetic heterogeneity in cancer cell population

Hiroyuki Aburatani (Genome Sci. & Med., RCAST, Tokyo Univ.)

がん細胞集団のエピゲノム多様性

油谷 浩幸 (東京大・先端研・ゲノムサイエンス)

#### CS2-5 A Comprehensive Single-Cell Atlas of Nonhematopoietic Cells in Lymphoma Reveals Landscape of Stromal Remodeling

Yoshiaki Abe<sup>1</sup>, Mamiko Sakata<sup>1</sup>, Manabu Fujisawa<sup>1</sup>, Hiroaki Miyoshi<sup>2</sup>, Yasuhiro Suehara<sup>1</sup>, Manabu Kusakabe<sup>1</sup>, Koichi Ohshima<sup>2</sup>, Tatsuya Oda<sup>3</sup>, Kosei Matsue<sup>4</sup>, Shigeru Chiba<sup>1</sup> (<sup>1</sup>Dept. Hematology, Univ. of Tsukuba, <sup>2</sup>Dept. Path., Sch. of Med., Kurume Univ., <sup>3</sup>Dept. Gastrointestinal & Hepato-Biliary-Pancreatic Surg., Univ. of Tsukuba, <sup>4</sup>Div. Hematology/Oncology, Dept. Internal Med., Kameda Med. Ctr.)

シングルセル解析によるリンパ腫間質細胞アトラスの構築と間質リモデリングの網羅的解析

安部 佳亮<sup>1</sup>, 坂田 麻実子<sup>1</sup>, 藤澤 学<sup>1</sup>, 三好 寛明<sup>2</sup>, 末原 泰人<sup>1</sup>, 日下部 学<sup>1</sup>, 大島 孝一<sup>2</sup>, 小田 竜也<sup>3</sup>, 末永 孝生<sup>4</sup>, 千葉 滋<sup>1</sup> (筑波大・医・血液内科, <sup>2</sup>久留米大・医・病理学講座, <sup>3</sup>筑波大・医・消化器外科, <sup>4</sup>亀田総合病院・血液・腫瘍内科)

#### CS2-6 Non-cell autonomous effects of mutated cells in the pathogenesis of clonal hematopoiesis.

Masahiro Nakagawa<sup>1</sup>, Ryosaku Inagaki<sup>2</sup>, Yasuhiro Nannya<sup>1</sup>, Lanying Zhao<sup>1,4</sup>, Yotaro Ochi<sup>1</sup>, June Takeda<sup>1</sup>, Xingxing Qi<sup>1</sup>, Akinori Yoda<sup>1</sup>, Ayana Kon<sup>1</sup>, Tetsuichi Yoshizato<sup>1</sup>, Nobuyuki Kakiuchi<sup>1</sup>, Hideki Makishima<sup>1</sup>, Shuichi Matsuda<sup>3</sup>, Seishi Ogawa<sup>1,4,5</sup> (<sup>1</sup>Dept. Path. & Tumor Biol., Kyoto Univ., <sup>2</sup>DSP Cancer Inst., Sumitomo Dainippon Pharma Co., Ltd., <sup>3</sup>Dept. Orthopedic Surg. in Kyoto Univ. Hosp., <sup>4</sup>WPI-ASHBi, Kyoto Univ., <sup>5</sup>Dept. Med., HERM, Karolinska Inst.)

変異と発現のマルチオミクス単一細胞解析によって明らかにされたクローン造血における初期変異細胞の有する非細胞自律性作用

中川 正宏<sup>1</sup>, 稲垣 良作<sup>2</sup>, 南谷 泰仁<sup>1</sup>, 趙 蘭英<sup>1,4</sup>, 越智 陽太郎<sup>1</sup>, 竹田 淳恵<sup>1</sup>, 威 星星<sup>1</sup>, 依田 成玄<sup>1</sup>, 昆 彩奈<sup>1</sup>, 吉里 哲一<sup>1</sup>, 垣内 伸之<sup>1</sup>, 牧島 秀樹<sup>1</sup>, 松田 秀一<sup>3</sup>, 小川 誠司<sup>1,4,5</sup> (筑波大・医・腫瘍生物学講座, <sup>2</sup>大日本住友製薬 がん創薬研, <sup>3</sup>京都大・整形外科学講座, <sup>4</sup>京都大・WPIヒト生物学高等研究拠点, <sup>5</sup>カロリンスカ研・血液再生医学部門)

SP2

### Beyond the 80 Years' History of the Japanese Cancer Association 癌学会の歴史(80年を超えて)

Chairpersons: Tetsuo Noda (Cancer Inst. of JFCR)

Hideyuki Saya (Div. Gene Regulation, IAMR, Keio Univ. Sch. Med.)

座長：野田 哲生 ((公財) がん研・研)

佐谷 秀行 (慶應大・医・先端研・遺伝子制御)

The Japanese Cancer Association (JCA) was established in 1941, and this year marks the 80th anniversary. In the last 80 years, JCA has played a major role in the development of basic and clinical cancer researches as well as the improvement of medical care for cancer patients. Based on the theme of this annual meeting, "Bringing hope for future cancer eradication, building on the past 80 years," we would like to ask leaders to summarize the history of cancer research in various fields in Japan and discuss how JCA will collaborate with academia and society in the future.

#### SP2-1 Welcome Message

Tetsuo Noda (Cancer Inst. of JFCR)

はじめに

野田 哲生 ((公財) がん研・研)

#### SP2-2 Pathology and the Japanese Cancer Association

Masahide Takahashi (Fujita Health Univ., Ctr. for Cell & Gene Therapy)

病理学と日本癌学会

高橋 雅英 (藤田医科大学国際再生医療センター)

#### SP2-3 Past, present and future of carcinogenesis research in Japanese Cancer Association (JCA)

Hitoshi Nakagama (Natl. Cancer Ctr. Res. Inst.)

日本癌学会における発がん研究

中金 斉 (国立がん研セ)

#### SP2-4 History of Cancer Epidemiology

Keitaro Matsuo (Aichi Cancer Ctr.)

がん疫学の歴史

松尾 恵太郎 (愛知県がんセ)

#### SP2-5 Genomics in Cancer Research

Yusuke Nakamura (Cancer Precision Med. Ctr., JFCR)

がん研究におけるゲノム科学

中村 祐輔 ((公財) がん研・がんプレジジョン医療研究セ)

#### SP2-6 Antitumor Drug Development and the Japanese Cancer Association

Naoya Fujita (Cancer Chemother. Ctr., JFCR)

がん治療薬開発と日本癌学会

藤田 直也 ((公財) がん研・化療セ)

#### SP2-7 Special Message: Contribution to the Translational Research on cancer by the Japanese Cancer Association

Ryuzo Ueda (Aichi Med. Univ. Tumor Immunol.)

特別発言・橋渡し研究に対する日本癌学会の貢献

上田 龍三 (愛知医大・腫瘍免疫学講座)

#### SP2-8 AACR Partnerships with JCA on the occasion of the 80th Anniversary of the JCA

Foti Margaret (American Association for Cancer Research)

#### SP2-9 Conclusion

Hideyuki Saya (Div. Gene Regulation, IAMR, Keio Univ. Sch. Med.)

終わりに

佐谷 秀行 (慶應大・医・先端研・遺伝子制御)

S5

### Aging with and without cancer

老化とがん

Chairpersons: Eiji Hara (Res. Inst. for Microbial Diseases, Osaka Univ.)  
Hozumi Motohashi (Inst. of Development, Aging & Cancer,  
Tohoku Univ.)

座長：原 英二 (大阪大・微生物病研)  
本橋 ほづみ (東北大・加齢研)

Aging is the largest risk factor for the development of cancer, yet very little is known about how aging promotes cancer development. Given the important role of aging in human cancer development, it is clear that more focus should be placed on discovering and deciphering the key molecular pathways involved in aging-associated cancer. In particular, recent advances in genomic and epigenomic studies and stem cell biology made it possible to perform comparative genomic/epigenomic profiling of various tissue stem cells throughout aging. This approach, together with human organoid technology, will unveil the molecular pathways integrating the genomic/epigenomic alteration of stem cell function and oncogenic transformation during the aging process. In this symposium, four invited speakers will present novel findings in the cutting-edge field of aging-associated cancer. Also, time will be allotted for three short oral presentations selected from submitted abstracts. We hope that this symposium will allow you to evaluate the latest evidence that links components of the aging process to cancer and to clarify, where possible, how these components accelerate carcinogenesis.

#### S5-1 Supercentarian Study: the quest for biological determinants of healthy longevity

Hideyuki Okano<sup>1</sup>, Yasumichi Arai<sup>2</sup> (<sup>1</sup>Dept. Physiol., Keio Univ., Sch. Med., <sup>2</sup>Ctr. for Supercentarian Med. Res., Keio Univ., Sch. Med.)

スーパーセンテナリアン研究：健康長寿の生物学的決定要因の探求  
岡野 栄之<sup>1</sup>、新井 康通<sup>2</sup> (<sup>1</sup>慶應大・医・生理学、<sup>2</sup>慶應大・医・百寿総合研究セ)

#### S5-2 The mechanisms of cancer-resistance in the naked mole-rat, the longest-lived rodent

Kyoko Miura (Kumamoto Univ., Faculty of Life Sci.)

最長寿命齧歯類ハダカデバネズミにおける発がん耐性のメカニズム  
三浦 恭子 (熊本大・院生命科学・老化・健康長寿学)

#### S5-3 Mitochondrial complex II dysfunction leads to hematopoietic stem cells aging and clonal hematopoiesis

Kaito Harada<sup>1</sup>, Takashi Yahata<sup>2</sup>, Takamasa Ishii<sup>3</sup>, Eri Kikkawa<sup>1</sup>, Yoichi Gondo<sup>3</sup>, Kiyoshi Ando<sup>1,2</sup> (<sup>1</sup>Hematology & Oncology, Tokai Univ., <sup>2</sup>Res. Ctr. for Regenerative Med., Tokai Univ., <sup>3</sup>Mol. Life Sci., Tokai Univ.)

ミトコンドリア複合体IIの機能異常と造血幹細胞老化およびクローン造血  
原田 介斗<sup>1</sup>、八幡 崇<sup>2</sup>、石井 恭正<sup>3</sup>、吉川 枝里<sup>1</sup>、榎藤 洋一<sup>3</sup>、安藤 潔<sup>1,2</sup> (<sup>1</sup>東海大・血液腫瘍内科、<sup>2</sup>東海大・再生医学セ、<sup>3</sup>東海大・分子生命科学)

#### S5-4 Tet2-deficient inflammatory cells exacerbates lung cancer progression through promoting tumor angiogenesis

Yen Nguyen<sup>1</sup>, Manabu Fujisawa<sup>2</sup>, Tran B. Nguyen<sup>2</sup>, Yasuhito Suehara<sup>3</sup>, Tatsuhiro Sakamoto<sup>3</sup>, Ryota Matsuoka<sup>4</sup>, Yoshiaki Abe<sup>1</sup>, Kota Fukumoto<sup>3</sup>, Keiichiro Hattori<sup>3</sup>, Masayuki Noguchi<sup>1</sup>, Daisuke Matsubara<sup>5</sup>, Shigeru Chiba<sup>3,4</sup>, Mamiko Sakatayanagimoto<sup>2,3</sup> (<sup>1</sup>Dept. Hematology, Grad. Sch. of Comprehensive Human Sci., Univ. of Tsukuba, <sup>2</sup>Dept. Hematology, Faculty of Med., Univ. of Tsukuba, <sup>3</sup>Dept. Hematology, Univ. of Tsukuba Hosp., <sup>4</sup>Dept. Pathol., Faculty of Med., Univ. of Tsukuba, <sup>5</sup>Dept. Pathol., Jichii Med. Univ.)

#### S5-5 Senolysis: a potential approach against pulmonary aging and diseases.

Masataka Sugimoto<sup>1,2</sup> (<sup>1</sup>Res. Inst. Natl. Ctr. Ger. Gerontol., <sup>2</sup>Nagoya Univ. Grad. Sch. Med.)

呼吸器疾患における senolysis の効果  
杉本 昌隆<sup>1,2</sup> (<sup>1</sup>国立長寿医療研究セ・研、<sup>2</sup>名古屋大・院医)

#### S5-6 Identification of bivalent chromatin domain in senescent cells

Naoko Hattori, Yuyu Liu, Toshikazu Ushijima (Div. Epigenomics, Natl. Cancer Ctr. Res. Inst.)

老化細胞は可塑性に関わる bivalent クロマチドドメインを有する  
服部 奈緒子、リュウ ユユ、牛島 俊和 (国立がん研セ・研・エピゲノム)

#### S5-7 Understanding the roles of cellular senescence in cancer by single-cell analyses of p16Ink4a-positive cells

Yoshikazu Johmura, Makoto Nakanishi (IMSUT, Cancer Cell Biol.)

一細胞解析を用いたがんにおける細胞老化の多様性と役割の解明  
城村 由和、中西 真 (東京大・医科研・癌防御シグナル分野)

SP3

### Future perspectives on cancer prevention research

(Joint symposium with Japanese Association for Cancer Prevention)  
がん予防研究の未来展望 (日本がん予防学会とのジョイントシンポジウム)

Chairpersons: Shinya Toyokuni (Nagoya Univ. Grad. Sch. Med.)  
Yukari Totsuka (Nihon Univ. Sch. Pharm, Lab. Environ. Toxicol. & Carcinogenesis/Natl. Cancer Ctr. Res. Inst.)

座長：豊國 伸哉 (名古屋大・院医)  
戸塚 ゆ加里 (日本大・薬・環境衛生/国立がん研セ・研)

Cancer is the leading cause of human mortality in Japan since 1981. Although numerous novel therapies, such as various protein kinase inhibitors, antibody drugs and immune checkpoint inhibitors, have been developed and used in clinics as precision medicine, number of deaths from cancer is still increasing worldwide. It is time to consider cancer prevention more seriously. In this joint symposium between the Japanese Cancer Association (JCA) and the Japanese Cancer Prevention Society (JCPS), 6 distinguished speakers will introduce the latest topics concerning the symposium entitled "Future perspectives on cancer prevention research". We would learn the current status and discuss the future perspectives on cancer prevention research from diverse standpoints, including epidemiology based on big data analysis, DNA adduct formation in the genome via the environmental factors, identified driver genes, germline variants and distinct lifestyle based on NGS analysis of precancerous/cancerous lesions, and practical chemoprevention on high-risk population. We hope that this premier joint symposium would promote cancer prevention research in Japan, eventually leading to decrease, delay and cure cancer in Japan.

#### SP3-1 Recent epidemiological trends of cancer in Japan

Manami Inoue (Div. Prev., Ctr. Public Health Sci., Natl. Cancer Ctr.)

日本におけるがんの疫学的動向  
井上 真奈美 (国立がん研セ・社健セ・予防研究部)

#### SP3-2 Impact of clonal hematopoiesis in the Japanese population

Seishi Ogawa (Dept. of Pathol. and Tumor Biol., Kyoto Univ.)

日本人集団におけるクローン性造血の臨床的意義について  
小川 誠司 (京大・院医・腫瘍生物学)

#### SP3-3 Recent Progress of Colorectal Carcinogenesis Preventive Trial in Japan

Michihiro Mutoh (Dept. Mol. Targeting Prev., Kyoto Pref. Univ. Med.)

我が国における大腸発がん予防臨床試験の進捗  
武藤 倫弘 (京都府立医大・医・分子標的予防医学)

#### SP3-4 Potential of chemoprevention by angiotensin 2 receptor blocker for prostate cancer

Hiroji Uemura<sup>1</sup>, Hideki Ishikawa<sup>2</sup>, Michihiro Mutoh<sup>2</sup>, Kazuki Kobayashi<sup>3</sup>, Junichi Ohta<sup>5</sup>, Yasuhide Miyoshi<sup>1</sup>, Takashi Kawahara<sup>1</sup>, Yutaka Matsuyama<sup>6</sup>, Yasunari Mano<sup>7</sup>, Satoru Takahashi<sup>4</sup> (<sup>1</sup>Yokohama City Univ. Med. Ctr. Urology & Renal Transplantation, <sup>2</sup>Kyoto Pref. Univ. of Med. Mol. Targeting Prevention, <sup>3</sup>Yokosuka Kyousai Hosp. Urology, <sup>4</sup>Nagoya City Univ. Exp. Path. & Tumor Biol., <sup>5</sup>Yokohama Municipal Citizen's Hosp. Urology, <sup>6</sup>Univ. of Tokyo Biostatistics & bioinformatics course, <sup>7</sup>Tokyo Univ. of Sci. Pharm. Sci.)

降圧剤のアンジオテンシン受容体ブロッカーによる前立腺がん発生予防の可能性を探る

上村 博司<sup>1</sup>、石川 秀樹<sup>2</sup>、武藤 倫弘<sup>2</sup>、小林 一樹<sup>3</sup>、太田 純一<sup>5</sup>、三好康秀<sup>1</sup>、河原 崇司<sup>1</sup>、松山 裕<sup>6</sup>、真野 泰成<sup>7</sup>、高橋 智<sup>4</sup> (横浜大附属センター病院・泌尿器腎移植科、<sup>2</sup>京都府立医大・分子標的癌予防医学、<sup>3</sup>横須賀共済病院・泌尿器科、<sup>4</sup>名古屋市大・実験病態病理学分野、<sup>5</sup>横浜市立市民病院、<sup>6</sup>東京大・医・公共健康医学、<sup>7</sup>東京理科大・薬・薬学科)

#### SP3-5 Comprehensive analysis of cancer driver mutations and mutational signatures in trans-ethnic 1300 gastric cancer genomes

Tatsuhiro Shibata<sup>1,2</sup>, Yasushi Totoki<sup>2</sup>, Mihoko Adachi<sup>2</sup> (<sup>1</sup>Lab. Mol. Med. IMSUT, <sup>2</sup>Div. Cancer Genomics, Natl. Cancer Center. Res. Inst.)

大規模多民族胃がんゲノム解析によるドライバー異常並びに変異シグネチャー解析

柴田 龍弘<sup>1,2</sup>、十時 泰<sup>2</sup>、足立 美保子<sup>2</sup> (<sup>1</sup>東京大・医科研・ゲノム医科学分野、<sup>2</sup>国立がん研セ・研・がんゲノミクス)

#### SP3-6 Comprehensive analyses of genome / DNA adducts elucidate association between environmental factors and human cancers

Yukari Totsuka<sup>1,2</sup> (<sup>1</sup>Nihon Univ. Sch. Pharm, Lab. Environ. Toxicol. & Carcinogenesis, <sup>2</sup>Natl. Cancer Ctr. Res. Inst.)

ゲノムおよびDNA付加体網羅的解析により環境因子とがん発生との関連を解明する

戸塚 ゆ加里<sup>1,2</sup> (<sup>1</sup>日本大・薬・環境衛生、<sup>2</sup>国立がん研セ・研)

SP1

### Does precision oncology offer patients superior therapies?: Lessons learned and challenges for the future

がん遺伝子パネル検査は、臨床の現場に革命をおこせたのか? : 今から学び、未来へつなぐ

Chairpersons: Yosuke Uchitomi (Natl. Cancer Ctr. Hosp.)  
Hirotugu Kenmotsu (Div. of Thoracic Oncol., Shizuoka Cancer Ctr.)

座長: 内富 庸介 (国立がん研セ・中央病院)  
釘持 広知 (静岡がんセ・ゲノム医療推進)

Precision oncology has made progress in recent years and is currently at the heart of revolutionizing cancer research. Development of therapeutics based on cancer genome profiles, which was combined with the development of large biological databases, bioinformatics, and computational tools, hold great potential for improving the clinical outcomes of cancer patients; they also allow clinicians to tailor treatment strategies toward a specific genetic alteration to precisely target an individual patient. Some expected outcomes of genetically matched therapeutics include increased response rates, more profound responses, more durable responses, and decreased treatment-related adverse effects. While the promise of novel and targeted therapies has elevated patients' hopes of the benefits of cancer genome profiling tests, the lack of relevant genomic findings and/or limited access to appropriate therapies remain essential themes in current clinical practice. In May 2019, two profiling tests were approved with reimbursement in Japan: FoundationOne CDx Cancer Genomic Profile and OncoGuide NCC Oncopanel System, which are fully covered by the national health insurance system. This session will discuss lessons from the real-world experience in the multi-disciplinary viewpoints from liaison, hub, and core hospitals and challenges for the improvement of future precision-oncology.

#### SP1-1 Challenges in community education on cancer genome medicine

Keigo Komine<sup>1</sup>, Hidekazu Shiota<sup>1</sup>, Chikashi Ishioka<sup>1,2</sup> (<sup>1</sup>Dept. Med. Oncol., Tohoku Univ. Hosp., <sup>2</sup>Dept. Clin. Oncol., Tohoku Univ. Grad. Sch. Med.)

地域におけるがんゲノム医療の啓蒙と今後の課題

小峰 啓吾<sup>1</sup>、城田 英和<sup>1</sup>、石岡 千加史<sup>1,2</sup> (<sup>1</sup>東北大・病院・腫瘍内科、<sup>2</sup>東北大・医・臨床腫瘍学)

#### SP1-2 Preparation and human resources for next-generation sequencing in a cancer genome associated hospital

Hiroaki Okamoto (Dept. Respiratory Med., Yokohama Municipal Citizen's Hosp.)

連携病院における、がんゲノム医療体制の整備や人材確保における経験

岡本 浩明 (横浜市立市民病院・呼吸器内科)

#### SP1-3 The Role of the Cancer Genomic Medical Coordinators for Precision Cancer Medicine

Kana Kunitomo (Patient & Family Support Ctr., Shizuoka Cancer Ctr.)

がんゲノム医療コーディネーターによるがん遺伝子プロファイリング検査を受けた患者・家族への支援

國友 香奈 (静岡がんセ・患者家族支援セ)

#### SP1-4 Support system for patients and their families with hereditary tumor from the perspective of Certified Genetic Counselor

Mashu Futagawa<sup>1,2</sup>, Yusaku Urakawa<sup>2</sup>, Reimi Sogawa<sup>1</sup>, Mariko Kochi<sup>1</sup>, Hideki Yamamoto<sup>1,2</sup>, Akira Hirasawa<sup>1,2</sup> (<sup>1</sup>Dept. Clin. Genomic Med., Okayama Univ. Hosp., <sup>2</sup>Dept. Clin. Genomic Med., Grad. Sch., Okayama Univ.)

認定遺伝カウンセラーからみた遺伝性腫瘍を有する患者・家族へのサポート体制

二川 摩周<sup>1,2</sup>、浦川 優作<sup>2</sup>、十川 麗美<sup>1</sup>、河内 麻里子<sup>1</sup>、山本 英喜<sup>1,2</sup>、平沢 晃<sup>1,2</sup> (<sup>1</sup>岡山大・病院・臨床遺伝子診療科、<sup>2</sup>岡山大・院医歯薬・臨床遺伝子医療学)

#### SP1-5 What can we do to achieve a personalized and precise approach to cancer patients in the era of precision oncology?

Takafumi Koyama (Dept. Exp. Therap., Natl. Cancer Ctr. Hosp.)

がんゲノム医療の現状と個別化実現に向けた提案

小山 隆文 (国立がん研セ・中央病院・先端医療科)

SST2

### Progress in basic and clinical research on hepato-biliary-pancreatic cancer

肝胆膵がんにおける基礎および臨床研究の進展

Chairpersons: Michiie Sakamoto (Dept. Pathol., Keio Univ. Sch. of Med.)  
Shinji Tanaka (Dept. Mol. Oncology, Tokyo Med. & Dent. Univ.)

座長: 坂元 亨宇 (慶應大・医・病理学教室)  
田中 真二 (東京医歯大・医・分子腫瘍医学)

Hepato-biliary-pancreatic cancers are typically intractable, and it's not rare that they relapse rapidly even after radical treatment. The development of novel diagnostic and therapeutic methods is regarded as an urgent issue. In hepatocellular carcinoma (HCC), various targeted and immuno-oncology agents have been clinically applied, but their biomarkers are still unknown. Additionally, there are emerging problems such as the post-SVR hepatocarcinogenesis and the increase of HCC with metabolic dysfunction-associated liver disease including NASH. In cholangiocarcinoma, several clinical trials with targeted agents have shown promising results in cases of the specific mutations, but only in a few subtypes. Pancreatic cancer is difficult to diagnose at an early stage, not to mention that it remains a definitely unmet medical need. Further innovation is required for identification of novel biomarkers using cfDNA, microRNA, exosomes, etc. In this symposium, we would like to have attractive presentations and active discussions on the latest topics from the investigation of molecular mechanisms to the development of prevention, early diagnosis, and treatment in the next generation.

#### SST2-1 Pancreatic cancer subtypes according to immune/stromal heterogeneity: real-world data from pathology imaging informatics

Yohei Masugi<sup>1,2</sup>, Tokiya Abe<sup>2</sup>, Ken Yamazaki<sup>2</sup>, Akihisa Ueno<sup>1,2</sup>, Yoko Nishimura<sup>2,3</sup>, Minoru Kitago<sup>4</sup>, Michiie Sakamoto<sup>2</sup> (<sup>1</sup>Div. Diag. Pathol., Keio Univ. Sch. Med., <sup>2</sup>Dept. Pathol., Keio Univ. Sch. Med., <sup>3</sup>Dept. Pathol. Int. Univ. Health & Welfare Sch. Med., <sup>4</sup>Dept. Surg. Keio Univ. Sch. Med.)

免疫・間質多様性に基づく膵癌サブタイプ分類: 病理画像情報科学によるリアルワールドデータ

眞杉 洋平<sup>1,2</sup>、阿部 時也<sup>2</sup>、山崎 峻<sup>2</sup>、上野 彰久<sup>1,2</sup>、西村 瑠子<sup>2,3</sup>、北郷 実<sup>4</sup>、坂元 亨宇<sup>2</sup> (<sup>1</sup>慶應大・医・病理診断部、<sup>2</sup>慶應大・医・病理学教室、<sup>3</sup>国際医療福祉大・医・病理、<sup>4</sup>慶應大・医・外科学教室)

#### SST2-2 Progress in basic and clinical research on hepato-biliary-pancreatic cancer - cholangiocarcinomas -

Takuji Okusaka (Dept. Hepatobiliary Pancreatic Oncology, Natl. Cancer Ctr. Hosp.)

肝胆膵がんにおける基礎および臨床研究の進展 - 胆管癌 -  
奥坂 拓志 (国立がん研セ・中央病院・肝胆膵内科)

#### SST2-3 Unexpected exacerbation of liver injury and carcinogenesis by inhibiting SCAP/SREBP in murine NASH

Hayato Nakagawa (Dept. Gastroenterology, The Univ. of Tokyo)

脂質合成阻害がNASH進展・発癌に与える予想外の影響について  
中川 勇人 (東京大・消化器内科)

#### SST2-4 Establishment of molecular-immunological subtypes and development of specific models for therapeutic application in HCC

Shu Shimada, Shinji Tanaka (Dept. Mol. Oncol., Tokyo Med. & Dent. Univ.)

肝細胞癌の分子免疫サブタイプ分類の確立と特異的モデル構築による治療開発

島田 周、田中 真二 (東京医歯大・院医歯学総合・分子腫瘍医学)

#### SST2-5 Organoids of pancreatobiliary cancers applied for personalized medicine

Masahiro Shiihara<sup>1,2</sup>, Ryota Higuchi<sup>2</sup>, Yasunobu Okamura<sup>3</sup>, Kengo Kinoshita<sup>3</sup>, Masakazu Yamamoto<sup>2</sup>, Fuyuhiko Motoi<sup>4</sup>, Michiaki Unno<sup>3</sup>, Toru Furukawa<sup>1</sup> (<sup>1</sup>Dept. Investigative Path., Tohoku Univ. Grad. Sch. of Med., <sup>2</sup>Dept. Gastrointestinal Surg., Tokyo Womens Med. Univ., <sup>3</sup>Dept. Surg., Tohoku Univ. Grad. Sch. of Med., <sup>4</sup>Dept. Surg. I, Yamagata Univ. Grad. Sch. of Med., <sup>5</sup>Tohoku Univ. Advanced Res. Ctr. for Innovations in Next-Generation Med.)

膵胆道癌オルガノイドの個別化医療モデルへの活用

椎原 正尋<sup>1,2</sup>、樋口 亮太<sup>2</sup>、岡村 容伸<sup>3</sup>、木下 賢吾<sup>3</sup>、山本 雅一<sup>2</sup>、元井 冬彦<sup>4</sup>、海野 倫明<sup>3</sup>、古川 徹<sup>1</sup> (<sup>1</sup>東北大・病態病理学、<sup>2</sup>東京女子医大・消化器・一般外科、<sup>3</sup>東北大・総合外科、<sup>4</sup>山形大・第一外科、<sup>5</sup>東北大・未来型医療創成セ)

IS3

**Epitranscriptome and tumor heterogeneity**  
エピトランスクリプトームと腫瘍多様性

Chairpersons: Hideshi Ishii (Osaka Univ. Grad. Sch. of Med., Ctr. of Med. Innovation and Translational Res.)  
Haojian Zhang (Med. Res. Inst., Wuhan Univ.)

座長: 石井 秀始 (大阪大・院医・最先端医療イノベーションセ)  
Haojian Zhang (Med. Res. Inst., Wuhan Univ.)

The history of the epigenome proposed by Waddington in 1942 now extends from DNA to RNA. Chemistry is thriving in the Pacific Rim region, particularly in China, and it has helped the Western World comprehend the process of RNA modifications for more than 80 varieties. RNA modifications play a role in the expression and function of various RNAs, which contribute to the diversity of heterogeneous tumors. In this symposium, we will discuss about the significance of RNA modification (epitranscriptome), RNA expression, and translation process in order to understand tumor diversity and cell reprogramming by utilizing state-of-art technologies aimed at single molecule and cell resolution. Alterations in tumors, such as those in carcinogen-exposed epithelial tumors, sarcomas, rare malignancies, and tumors derived from the embryonic mesoderm, are diverse. Some of these targets are attracting attentions as a companion diagnostic for lymph node metastasis as well as primary regions. These targets can also help in further drug discovery that promotes precision medicine as a Food and Drug Administration priority development item. In this session, we will discuss about new research trends that approach the true nature of cancer diversity, with young scientists from Asian and Oceanian regions as the symposium.

**IS3-1 RNA m6A demethylase ALKBH5 is required for acute myeloid leukemia development**

Haojian Zhang, Peipei Wang, Mengdie Feng, Guoqiang Han, Rong Yin (Med. Res. Inst., Sch. of Med., Wuhan Univ.)

**IS3-2 RNA modification, a new biomarker for early stages of pancreatic cancer**  
Masamitsu Konno<sup>1,2</sup>, Hideshi Ishii<sup>1</sup> (Tokyo Univ. of Sci., <sup>2</sup>Grad. Sch. Med. Osaka Univ.)

早期膵がんのバイオマーカーとしてのRNA修飾  
今野 雅允<sup>1,2</sup>、石井 秀始<sup>2</sup> (1東京理科大・生命医科学研、<sup>2</sup>大阪大・院医)

**IS3-3 Novel driver gene 5MP1 reprograms c-Myc translation initiation to drive malignant phenotypes in colorectal cancer**

Takaaki Masuda<sup>1</sup>, Kuniaki Sato<sup>2</sup>, Kensuke Koike<sup>1</sup>, Katsura Asano<sup>3</sup>, Koshi Mimori<sup>1</sup> (Dept. Surg., Kyushu Univ. Beppu Hosp., <sup>2</sup>Dept. Head & Neck Surg., Kyushu Cancer Ctr., <sup>3</sup>Div. Biol. Kansas State Univ.)

新規ドライバー遺伝子 5MP1 は癌遺伝子 c-Myc の翻訳開始点を制御することで大腸癌の進展に関与する

増田 隆明<sup>1</sup>、佐藤 晋彰<sup>2</sup>、小池 健輔<sup>1</sup>、浅野 桂<sup>3</sup>、三森 功士<sup>1</sup> (1九州大・別府病院・外科、<sup>2</sup>九州がんセ・頭頸科、<sup>3</sup>カンザス州立大・生物学部)

**IS3-4 Clustering Analysis of Protein and Gene Expression in Gastric Cancers with Lymph Node Metastasis**

Gen Tsujio<sup>1,2,3</sup>, Koji Maruo<sup>1,2,3</sup>, Yurie Yamamoto<sup>2,3</sup>, Tomohiro Sera<sup>1,2,3</sup>, Atsushi Sugimoto<sup>1,2,3</sup>, Syuhei Kushiyama<sup>1,2,3</sup>, Sadaaki Nishimura<sup>1,2,3</sup>, Kenji Kuroda<sup>1,2,3</sup>, Shingo Togano<sup>1,2,3</sup>, Mami Yoshii<sup>1</sup>, Tatsuro Tamura<sup>1</sup>, Takahiro Toyokawa<sup>1</sup>, Hiroaki Kasashima<sup>1,2,3</sup>, Masakazu Yashiro<sup>1,2,3</sup> (Dept. Gastroenterological Surg., Osaka City Univ., <sup>2</sup>Mol. Oncology & Therap., Osaka City Univ., <sup>3</sup>Cancer Ctr. for Translational Res., Osaka City Univ.)

クラスター分析を用いた胃癌リンパ節転移に関与する蛋白および遺伝子の解析

辻尾 元<sup>1,2,3</sup>、丸尾 晃司<sup>1,2,3</sup>、山本 百合恵<sup>2,3</sup>、瀬良 知央<sup>1,2,3</sup>、杉本 敦史<sup>1,2,3</sup>、榊山 周平<sup>1,2,3</sup>、西村 貞徳<sup>1,2,3</sup>、黒田 顕慈<sup>1,2,3</sup>、桐野 真吾<sup>1,2,3</sup>、吉井 真美<sup>1</sup>、田村 達郎<sup>1</sup>、豊川 貴弘<sup>1</sup>、笠島 裕明<sup>1,2,3</sup>、八代 正和<sup>1,2,3</sup> (大阪市立大・院・消化器外科学、<sup>2</sup>大阪市立大・院・癌分子病態制御学、<sup>3</sup>大阪市立大・院・難治癌 TRセ)

**IS3-5 Single Cell Profiling of Intratumor and Circulating Tumor Cell Heterogeneity for Better Cancer Prognostication**

Su Bin Lim (Dept. of Biochemistry and Molecular Biology, Ajou Univ. Sch. of Med.)

**IS3-6 Unraveling tumor diversity by microRNA: possibilities and limits**

Juntaro Matsuzaki<sup>1</sup>, Ken Kato<sup>2</sup>, Takahiro Ochiya<sup>3</sup> (Div. PharmacoTherap., Keio Univ. Pharm., <sup>2</sup>Dept. Head Neck Med. Oncol., Natl. Cancer Ctr. Hosp., <sup>3</sup>Inst. Med. Sci., Tokyo Med. Univ.)

microRNA で紐解く腫瘍多様性: 可能性と限界

松崎 潤太郎<sup>1</sup>、加藤 健<sup>2</sup>、落谷 孝広<sup>3</sup> (慶應大・薬・薬物治療学、<sup>2</sup>国立がん研セ・中央病院・頭頸部内科、<sup>3</sup>東京医大・医総研)

**IS3-7 Heritable defects in telomere and mitotic function selectively predispose to sarcomas**

David M. Thomas (Garvan Inst. of Med. Res.)

**SST2-6 Genetic analysis of synchronous or metachronous multiple pancreatic cancers**

Tomonori Hirano<sup>1,2</sup>, Nobuyuki Kakiuchi<sup>1,2</sup>, Yasuhide Takeuchi<sup>1,4</sup>, Toshihiko Masui<sup>3</sup>, Yuichi Shiraishi<sup>5</sup>, Satoru Miyano<sup>6</sup>, Norimitsu Uza<sup>2</sup>, Takeshi Tanaka<sup>7</sup>, Atsuhiko Masuda<sup>7</sup>, Yuzo Kodama<sup>7</sup>, Hiroshi Seno<sup>2</sup>, Tsutomu Chiba<sup>8</sup>, Seishi Ogawa<sup>1</sup> (Dept. Path. & Tumor Biol., Kyoto Univ., <sup>2</sup>Dept. Gastroenterology & Hepatology, Kyoto Univ., <sup>3</sup>Div. Hepato-Biliary-Pancreatic & Transplant Surg., Kyoto Univ., <sup>4</sup>Dept. Diagnostic Path., Kyoto Univ., <sup>5</sup>Div. Genome Analysis, Natl. Cancer Ctr. Res. Inst., <sup>6</sup>M&D Data Sci. Ctr. Tokyo Med. & Dent. Univ., <sup>7</sup>Dept. Gastroenterology, Kobe Univ. Grad. Sch. of Med., <sup>8</sup>Kansai Electric Power Hosp.)

**同時性・異時性多発膵癌の遺伝子解析**

平野 智紀<sup>1,2</sup>、垣内 伸之<sup>1,2</sup>、竹内 康英<sup>1,4</sup>、増井 俊彦<sup>3</sup>、白石 友一<sup>5</sup>、宮野 悟<sup>6</sup>、宇座 徳光<sup>2</sup>、田中 雄志<sup>7</sup>、増田 充弘<sup>7</sup>、児玉 裕三<sup>7</sup>、妹尾 浩<sup>2</sup>、千葉 勉<sup>8</sup>、小川 誠司<sup>1</sup> (1京都大・院・腫瘍生物学、<sup>2</sup>京都大・消化器内科、<sup>3</sup>京都大・病院・肝胆膵移植外科、<sup>4</sup>京都大・病院・病理診断科、<sup>5</sup>国立がん研セ・ゲノム解析室、<sup>6</sup>東京医歯大・M&D データ科学セ、<sup>7</sup>神戸大・消化器内科、<sup>8</sup>関西電力病院)

IS4

**Targeting super-enhancers in intractable cancer**  
 難治性がんにおけるスーパーエンハンサーの重要性

Chairpersons: Miwa Tanaka (Div. Carcinogenesis, The Cancer Inst., JFCR)  
 Eleni Tomazou (St. Anna Children's Cancer Res. Inst. (CCRI))  
 座長: 田中 美和 ((公財) がん研・発がん)  
 Eleni Tomazou (St. Anna Children's Cancer Res. Inst. (CCRI))

Super-enhancer (SE) is a cis-regulatory DNA element that is a large cluster of regular enhancers with a mediator complex. The distribution of SEs over the genome is dependent on cell lineages and differentiation stages, indicating that SEs define the identity of individual cell types. The association between oncogenic transcription factors (TFs) and SE/enhancer plays a critical role in certain types of cancer, because these TFs induce chromatin remodeling as pioneering factors and function in the appropriate epigenetic environment. Therefore, it is believed that cell-of-origin-specific SE/enhancer are key cis-elements for the development of cancers.

This session will focus on the tumorigenic mechanisms induced by oncogenic TFs in collaboration with SEs/enhancer in hematological, mesenchymal and mammary malignancies. We will also discuss novel approaches of therapies targeting the abnormal transcriptional machinery against the intractable cancers that are resistant to conventional chemotherapies.

**IS4-1 Genetics/epigenetics-mediated enhancer activation in myeloid transformation**

Goro Sashida (IRCMS, Kumamoto Univ.)

がん特異的エンハンサー活性化による骨髄系腫瘍の発症機構  
 指田 吾郎 (熊本大・国際先端医学研究機構)

**IS4-2 Targeting epigenetic regulators for cancer treatment**

Sudhakar Jha (Cancer Sci. Inst. of Singapore)

**IS4-3 Nuclear Transportable ADC with Triptolide Inhibits Tumor Cell Growth via Impaired Super-enhancer Function**

Takeo Yamada<sup>1</sup>, Mutsumi Hayashi<sup>2</sup> (<sup>1</sup>Dept. Path., Saitama Med. Univ., <sup>2</sup>Dept. Path., Keio Univ.)

Triptolide-抗CD26ヒト化抗体ADCのスーパーエンハンサー阻害による抗腫瘍効果  
 山田 健人<sup>1</sup>、林 睦<sup>2</sup> (<sup>1</sup>埼玉医大・医・病理、<sup>2</sup>慶應大・医・病理学教室)

**IS4-4 Master transcription factors form interconnected circuitry and promote malignant progression of breast phyllodes tumors**

Erwei Song, Yan Nie, Jianyou Liao, Hongyan Huang, Rong Lei (Breast tumor Ctr., Sun Yat-Sen Memorial Hosp., Sun-Yat-Sen Univ.)

**IS4-5 The role of super-enhancers in bone and soft tissue sarcoma**

Miwa Tanaka, Takuro Nakamura (Div. Carcinogenesis, The Cancer Inst., JFCR)

骨軟部肉腫の特性を規定するスーパーエンハンサーの役割  
 田中 美和、中村 卓郎 ((公財) がん研・発がん)

**IS4-6 Ewing sarcoma: An enhancer disease with widespread epigenetic heterogeneity**

Eleni Tomazou (St. Anna Children's Cancer Research Institute (CCRI))

SS1

**Woman scientists in cancer research (WSCR)**  
 がん研究における女性研究者

Chairpersons: Yae Kanai (Dept. Path., Keio Univ. Sch. of Med.)  
 Chizu Tanikawa (The Inst. of Med. Sci., The Univ. of Tokyo)  
 座長: 金井 弥栄 (慶應大・医・病理学教室)  
 谷川 千津 (東京大・医科研)

It has long been a major issue that the number of woman scientists, especially principal investigators (PIs), is low in Japan compared with other countries. Therefore, the Japanese Cancer Association (JCA) has been making an affirmative action to expand the population of woman scientists in cancer research, and a series symposium "Woman scientists in cancer research (WSCR)" has been held every year since 2014. The purpose of this symposium is to introduce high-quality sciences carried out by active women scientists to enlighten and encourage the next generation. For this 8th symposium, we have selected five women scientists from the open applicants, and the presenters will orally present their cutting-edge cancer research. The most outstanding presenter will be awarded the WSCR Symposium Award from JCA. We will also have two special lectures by Professors Chieko Kai (the University of Tokyo) and Yae Kanai (Keio University).

**SS1-1 Tumor responses of anti-CD137 agonist antibody activated by elevated extracellular ATP in tumor microenvironment**

Mika Sakurai<sup>1,2</sup>, Yoshinori Narita<sup>3,4</sup> (<sup>1</sup>Chugai Pharm., Co., Ltd., Res. Div., Discovery Biologics, <sup>2</sup>Chugai Pharm., Co., Ltd., Translational Res. Div., <sup>3</sup>Chugai Pharm., Co., Ltd., Discovery Pharmacology, <sup>4</sup>Chugai Pharambody Res., Pte. Ltd.)

腫瘍微小環境に高濃度に存在する細胞外ATPで活性化される抗CD137アゴニスト抗体による抗腫瘍・免疫反応  
 櫻井 実香<sup>1,2</sup>、成田 義規<sup>3,4</sup> (<sup>1</sup>中外製薬(株) 研究本部・バイオ医薬研究部、<sup>2</sup>中外製薬(株) トランスレーショナルリサーチ、<sup>3</sup>中外製薬(株) 研究本部・創薬薬理研究部、<sup>4</sup>中外ファーマボディー・リサーチ)

**SS1-2 The chromosome organization depends on dynamic interactions between condensin and chromosomal axial proteins**

Motoko Takahashi, Toru Hirota (Div. Exp. Pathol., Cancer inst., JFCR)

コンデンシンと染色体軸タンパク質間の動的相互作用による染色体構築メカニズム  
 高橋 元子、広田 亨 ((公財) がん研・研・実験病理部)

**SS1-3 The plastic nature of mitotic regulation propagates karyotypic diversity in cancer stem cells**

Minji Jo<sup>1</sup>, Oltea Sampetean<sup>2</sup>, Tetsuya Negoto<sup>1</sup>, Hideyuki Saya<sup>2</sup>, Toru Hirota<sup>1</sup> (<sup>1</sup>Exp. Path. Div., Cancer Inst., JFCR, <sup>2</sup>Gene Regulation, IAMR, Keio Univ. Sch. Med.)

がん幹細胞の核型変動を誘導する染色体動態制御の可塑性  
 趙 民知<sup>1</sup>、サンペトラ オルデア<sup>2</sup>、音琴 哲也<sup>1</sup>、佐谷 秀行<sup>2</sup>、広田 亨<sup>1</sup> (<sup>1</sup>(公財) がん研・研・実験病理部、<sup>2</sup>慶應大・医・先端研・遺伝子制御)

**SS1-4 Omental adipocytes promote peritoneal dissemination of gastric cancer.**

Makoto Natsume, Takaya Shimura, Yusuke Okuda, Hiromi Kataoka (Dept. of Gastroenterology and Metabolism, Nagoya City Univ.)

大網脂肪細胞はCXCL2-VEGFA axisを介し胃癌腹膜転移を促進する  
 夏目 まこと、志村 貴也、奥田 悠介、片岡 望洋 (名古屋市立大学 消化器代謝内科学)

**SS1-5 Sleeping Beauty transposon mutagenesis in colonic organoids identifies genes involved in colorectal cancer progression**

Haruna Takeda (Nat. Cancer Ctr. Res. Inst.)

Sleeping Beauty トランスポゾンを用いた大腸がん転移モデルの樹立  
 武田 はるな (国立がん研セ・研)

Chairperson: Junko Takita (Dept. Pediatrics, Grad. Sch. of Med., Kyoto Univ.)  
座長：滝田 順子（京大・院医・発達小児科）

**JWSA** **Development of Tax-targeted therapeutic vaccine for immunological control of ATL**



Mari Kannagi<sup>1,2</sup> (<sup>1</sup>Tokyo Med. Dent. Univ, <sup>2</sup>Kansai Med. Univ.)

成人T細胞白血病の免疫学的疾患機序の解明ならびにワクチン療法の開発

神奈木 真理<sup>1,2</sup> (<sup>1</sup>東京医科歯科大学、<sup>2</sup>関西医科大学・微生物学講座)

**SS1-6** **Development of novel therapy method using a recombinant oncolytic measles virus**

Chieko Kai<sup>1</sup>, Tomoko Fujiyuki<sup>1</sup>, Kanako Moritoh<sup>1</sup>, Fumitaka Nagamura<sup>2</sup>, Yoichi Furukawa<sup>3</sup>, Shunji Takahashi<sup>4</sup>, Misako Yoneda<sup>5</sup> (<sup>1</sup>Dept. Mechanic. Biofunct. Sys., Inst. Indust. Sci., Univ. Tokyo, <sup>2</sup>Ctr. Transl. Res., Inst. Med. Sci., The Univ. Tokyo, <sup>3</sup>Div. Clin. Genome Res., Inst. Med. Sci., The Univ. Tokyo, <sup>4</sup>Dept. Med. Oncol., Cancer Inst. Hosp., JFCR, <sup>5</sup>Virol. Med., Inst. Indust. Sci., Univ. Tokyo)

腫瘍溶解性麻疹ウイルスによる新たな治療法の開発

甲斐 知恵子<sup>1</sup>、藤幸 知子<sup>1</sup>、森藤 可南子<sup>1</sup>、長村 文孝<sup>2</sup>、古川 洋一<sup>3</sup>、高橋 俊二<sup>4</sup>、米田 美佐子<sup>5</sup> (<sup>1</sup>東京大・生産研・機械生体系・感染制御学、<sup>2</sup>東京大・医科研・TR 治験セ、<sup>3</sup>東京大・医科研・臨床ゲノム腫瘍学分野、<sup>4</sup>(公財)がん研・有明病院・総合腫瘍科、<sup>5</sup>東京大・生産研・ウイルス医療学)

**SS1-7** **Epigenome analysis using pathological tissue specimens for personalized treatment and prevention**

Yae Kanai (Dept. Path., Keio Univ. Sch. of Med.)

個別化治療・予防を目指した病理組織検体におけるエピゲノム解析  
金井 弥栄（慶應大・医・病理学教室）

**E14-1 Cancer basic, diagnosis and treatment (1):  
Hepatocellular cancer, Carcinoma of the biliary tract**

臓器がんの基礎・診断・治療 (1): 肝がん・胆道がん

Chairperson: Toshifumi Wakai (Div. Digestive &amp; General Surg., Niigata Univ. Grad. Sch. of Med. &amp; Dent. Sci.)

座長: 若井 俊文 (新潟大・院医歯学・消化器・一般外科学分野)

**E14-1-1 Inactivation of Traf3 promotes intrahepatic cholangiocarcinoma development via hepatocyte transdifferentiation**

Yuto Shioide, Takahiro Kodama, Hayato Hikita, Ryotaro Sakamori, Tomohide Tatsumi, Tetsuo Takehara (Osaka Univ. Grad. Sch. of Med. Dept. Gastroenterology &amp; Hepatology)

Traf3 の不活性化は肝細胞の分化転換を介した肝内胆管がん発がんを促進する

塩出 悠登、小玉 尚宏、疋田 隼人、阪森 亮太郎、巽 智秀、竹原 徹郎 (大阪大・院医・消化器内科学)

**E14-1-2 An Isolation Method of Hepatic Stellate Cells from Tumor Tissue of Obesity-Associated Hepatocellular Carcinoma**
Yi Cheng<sup>1</sup>, Naoko Ohtani<sup>1</sup>, Ryota Yamagishi<sup>1</sup>, Fumitaka Kamachi<sup>1,2</sup> (<sup>1</sup>PathoPhysiol., Grad. Sch. of Med., Osaka city Univ., <sup>2</sup>Single Cellome Unit, Yokogawa Electric Corporation)

肥満関連肝癌腫瘍組織からの肝星細胞の分離法

程 イ、大谷 直子、山岸 良多<sup>1</sup>、蒲池 史卓<sup>1,2</sup> (<sup>1</sup>大阪市立大・医学研究科・病態生理学、<sup>2</sup>横河電機 Single Cellome Unit)
**E14-1-3 Serum laminin  $\gamma$ 2 monomer as a novel predictive biomarker for hepatocellular carcinoma**
Naohiko Koshikawa<sup>1</sup>, Taro Yamashita<sup>2</sup>, Masatoshi Nakagawa<sup>3</sup>, Eisaku Yoshida<sup>3</sup>, Toru Yoshimura<sup>3</sup>, Shuichi Kaneko<sup>4</sup>, Motoharu Seiki<sup>5</sup> (<sup>1</sup>Dept. Life Sci. Tech, Tokyo Tech., <sup>2</sup>Dept. Gen Med., Kanazawa Univ. Hosp., <sup>3</sup>Diagnostics Div, Abbott Japan LLC, <sup>4</sup>Dept. Gastroenterology, Kanazawa Univ. Hosp., <sup>5</sup>Inst. of Med. Pharma& Health Sci, Kanazawa Univ.)血清ラミニン  $\gamma$ 2 単鎖は肝細胞がんの遠隔転移および C 型慢性肝炎からの発がんを予測可能な新たなバイオマーカーである越川 直彦<sup>1</sup>、山下 太郎<sup>2</sup>、中川 将利<sup>3</sup>、吉田 栄作<sup>3</sup>、吉村 徹<sup>3</sup>、金子 周一<sup>4</sup>、清木 元治<sup>5</sup> (<sup>1</sup>東京工業大・生命理工学院、<sup>2</sup>金沢大・附属病院総合診療部、<sup>3</sup>アポットジャパン 診断薬事業部、<sup>4</sup>金沢大・附属病院・消化器内科、<sup>5</sup>金沢大・医薬保健学域 医学類)
**E14-1-4 Comparison between the impact of fermented and unfermented soy intake on the risk of liver cancer: the JPHC Study**
Sarah K. Abe<sup>1</sup>, Norie Sawada<sup>1</sup>, Junko Ishihara<sup>2</sup>, Ribeka Takachi<sup>3</sup>, Nagisa Mori<sup>1</sup>, Taiki Yamaji<sup>1</sup>, Taichi Shimazu<sup>1</sup>, Atsushi Goto<sup>1</sup>, Motoki Iwasaki<sup>1</sup>, Manami Inoue<sup>1</sup>, Shoichiro Tsugane<sup>1</sup> (<sup>1</sup>Ctr. for Public Health Sci., Natl. Cancer Ctr., <sup>2</sup>Dept. Food & Life Sci., Azabu Univ., <sup>3</sup>Dept. Food Sci. & Nutrition, Nara Women's Univ.)
**E14-1-5 Chromosome 7 and 17 polysomy in formalin-fixed paraffin-embedded tissues as prognosis marker in Cholangiocarcinoma**
Deenonpoe Raksawan<sup>1</sup>, Raksawan Deenonpoe<sup>1</sup>, Prakasit Sangiamwibool<sup>2</sup>, Sasithorn Watcharadewittaya<sup>3</sup>, Thachanan Kongpan<sup>4</sup>, Kitti Intuyod<sup>5</sup>, Malinee Thancee<sup>6</sup>, Rungtiwa Nutalai<sup>7</sup> (<sup>1</sup>Dept. Pathol., Fact. of Med., Khon kaen Univ., Thailand, <sup>2</sup>Dept. Pathol., Fact. of Med., Khon kaen Univ., Thailand, <sup>3</sup>Dept. Pathol., Fact. of Med., Khon kaen Univ., Thailand, <sup>4</sup>Dept. Pathol., Fact. of Med., Khon kaen Univ., Thailand, <sup>5</sup>Dept. Pathol., Fact. of Med., Khon kaen Univ., Thailand, <sup>6</sup>Dept. Pathol., Fact. of Med., Khon kaen Univ., Thailand, <sup>7</sup>Nuffield Dept. Med., Univ. of Oxford, United Kingdom)
**E14-1-6 Arctigenin induces apoptosis and represses epithelial-mesenchymal Transition in cholangiocarcinoma cells**
Janthamala Sutthiwan<sup>1,3</sup>, Apinya Jusakul<sup>2,5</sup>, Sarinya Kongpetch<sup>3,5</sup>, Phongsaran Kimawaha<sup>1,5</sup>, Watcharin Loilome<sup>4,5</sup>, Poramate Klanrit<sup>4,5</sup>, Anchalee Techasen<sup>2,5</sup> (<sup>1</sup>Biomed. Sci. Program, Grad. Sch., Khon Kaen Univ., Thailand, <sup>2</sup>Faculty of Assoc. Med. Sci., Khon Kaen Univ., Thailand, <sup>3</sup>Dept. Pharm., Faculty of Med., Khon Kaen Univ., Thailand, <sup>4</sup>Dept. Biochem., Faculty of Med., Khon Kaen Univ., Thailand, <sup>5</sup>Cholangiocarcinoma Res. Inst., Khon Kaen Univ., Thailand)
**E14-2 Cancer basic, diagnosis and treatment (2): Gastric cancer**

臓器がんの基礎・診断・治療 (2): 胃がん

Chairperson: Shin Maeda (Yokohama City Univ.)

座長: 前田 慎 (横浜市大)

**E14-2-1 Oncolytic adenovirus-mediated p53 gene therapy enhances anti-tumor efficacy for peritoneal metastasis of gastric cancer**
Ema Mitsui<sup>1</sup>, Satoru Kikuchi<sup>1</sup>, Toshihiro Ogawa<sup>1</sup>, Motoyasu Tabuchi<sup>1</sup>, Yuta Une<sup>1</sup>, Hiroshi Tazawa<sup>2</sup>, Shinji Kuroda<sup>1</sup>, Kazuhiro Noma<sup>1</sup>, Shunsuke Kagawa<sup>1</sup>, Junko Ohtsuka<sup>3</sup>, Rieko Ohki<sup>3</sup>, Yasuo Urata<sup>4</sup>, Toshiyoshi Fujiwara<sup>1</sup> (<sup>1</sup>Dept. Gastroenterological Surg., Okayama Univ. Grad. Sch., Okayama, Japan, <sup>2</sup>Ctr. for Innovative Clin. Med., Okayama Univ. Hosp., <sup>3</sup>Fundamental Oncology, Natl. Cancer Ctr. Res. Inst., Tokyo, Japan, <sup>4</sup>Oncolys BioPharma, Inc., Tokyo, Japan)

腫瘍溶解性ウイルスを介した p53 遺伝子治療は胃癌腹膜播種に対する抗腫瘍効果を増強する

光井 恵麻<sup>1</sup>、菊地 寛次<sup>1</sup>、小川 俊博<sup>1</sup>、田淵 幹康<sup>1</sup>、宇根 悠太<sup>1</sup>、田澤 大<sup>2</sup>、黒田 新士<sup>1</sup>、野間 和広<sup>1</sup>、香川 俊輔<sup>3</sup>、大塚 旬子<sup>3</sup>、大木 理恵子<sup>3</sup>、浦田 泰生<sup>4</sup>、藤原 俊義<sup>1</sup> (<sup>1</sup>岡山大・医歯薬総合・消化器外科学、<sup>2</sup>岡山大・医歯薬総合・新開発医療セ、<sup>3</sup>国立がん研セ・基礎腫瘍学、<sup>4</sup>オンコロスバイオファーマ (株))
**E14-2-2 Isthmus stem cell marker IQGAP3 regulates homeostasis, tissue repair and metaplasia in stomach**
Junichi Matsuo<sup>1</sup>, Daisuke Dochi<sup>1,2</sup>, Yoshiaki Ito<sup>1</sup> (<sup>1</sup>Cancer Sci. Inst. of Singapore, Natl. Univ. of Singapore, <sup>2</sup>Dept. Surg., Tohoku Univ. Grad. Sch. of Med.)
**E14-2-3 Potential therapeutic targets discovery by transcriptome analysis of in vitro human gastric signet-ring carcinoma model**
Kyoko Yamaguchi<sup>1</sup>, Tomoyasu Yoshihiro<sup>1</sup>, Hiroshi Ariyama<sup>1</sup>, Kenji Tsuchihashi<sup>1</sup>, Hitoshi Kusaba<sup>1</sup>, Eishi Baba<sup>3</sup>, Koichi Akashi<sup>1</sup> (<sup>1</sup>Med. & Biosystemic Sci., Grad. Sch. Med. Sci., Kyushu Univ., <sup>2</sup>Oncology & Social Med., Grad. Sch. Med. Sci., Kyushu Univ.)

胃印環細胞癌モデルを使用した新規治療標的の探索

山口 享子<sup>1</sup>、吉弘 知恭<sup>1</sup>、有山 寛<sup>1</sup>、土橋 賢司<sup>1</sup>、草場 仁志<sup>1</sup>、馬場 英司<sup>2</sup>、赤司 浩一<sup>1</sup> (<sup>1</sup>九州大・院・病態修復内科、<sup>2</sup>九州大・院・連携社会医学分野)
**E14-2-4 Analyses of primary gastric cancer risk in a cohort of 4,257 asymptomatic subjects and accumulated DNA methylation**
Genki Usui<sup>1,2,3</sup>, Keisuke Matsusaka<sup>2,4</sup>, Masaki Fukuyo<sup>2</sup>, Bahiyar Rahmutulla<sup>2</sup>, Eiji Sakai<sup>2</sup>, Tetsuo Ushiku<sup>1</sup>, Atsushi Kaneda<sup>2</sup> (<sup>1</sup>Dept. Path., Grad. Sch. Med., The Univ. Tokyo, <sup>2</sup>Dept. Mol. Oncol. Grad. Sch. Med., Chiba Univ., <sup>3</sup>Dept. Diagn. Pathol., NTT Med. Ctr. Tokyo, <sup>4</sup>Dept. Path., Chiba Univ. Hosp., <sup>5</sup>Dept. Gastroenterol., NTT Med. Ctr. Tokyo)

4,257 人の無症候検診コホートをを用いた胃癌発症のリスク因子探索と胃粘膜に蓄積した DNA メチル化の解析

臼井 源紀<sup>1,2,3</sup>、松坂 恵介<sup>2,4</sup>、福世 真樹<sup>2</sup>、ラヒムトラ バハテヤリ<sup>2</sup>、酒井 英嗣<sup>2</sup>、牛久 哲男<sup>1</sup>、金田 篤志<sup>2</sup> (<sup>1</sup>東京大・医・人体病理学病理診断学分野、<sup>2</sup>千葉大・院・医歯・分子腫瘍学、<sup>3</sup>NTT 東日本関東病院・病理診断科、<sup>4</sup>千葉大・医附属病院・病理診断科、<sup>5</sup>NTT 東日本関東病院・消化器内科)
**E14-2-5 Biological impact of TRA-1-60 as a potential target against intractable gastric cancers.**

Eisaku Kondo, Ayaka Mitsui, Katsuyoshi Takata (Dept. Mol. Pathol. Niigata Univ. Med. Sch.)

TRA-1-60 は難治性胃癌制御のための有効な標的である。

近藤 英作、三ツ井 彩花、高田 尚良 (新潟大・医・分子病理)

**E14-2-6 Extracellular vesicles from peritoneal mesothelial cells stimulates the invasion capacity of gastric cancer cells**
Atsushi Sugimoto<sup>1,2</sup>, Masakazu Yashiro<sup>1,2</sup>, Tomohisa Okuno<sup>1</sup>, Yuichiro Miki<sup>1,2</sup>, Koji Maruo<sup>1,2</sup>, Gen Tsujio<sup>1,2</sup>, Yurie Yamamoto<sup>2</sup>, Tomohiro Sera<sup>1,2</sup>, Syuhei Kushiyama<sup>1,2</sup>, Sadaaki Nishimura<sup>1,2</sup>, Shingo Togano<sup>1,2</sup>, Kenji Kuroda<sup>1,2</sup>, Masaichi Ohira<sup>1</sup> (<sup>1</sup>Gastroenterological Surg., Osaka City Univ. Grad. Sch. of Med., <sup>2</sup>Mol. Oncology & Therap., Osaka City Univ. Grad. Sch.)

腹膜中皮細胞由来の細胞外小胞は胃癌細胞の浸潤能を促進する

杉本 敦史<sup>1,2</sup>、八代 正和<sup>1,2</sup>、奥野 倫久<sup>1</sup>、三木 友一朗<sup>1,2</sup>、丸尾 晃司<sup>1,2</sup>、辻尾 元<sup>1,2</sup>、山本 百合恵<sup>2</sup>、瀬良 知央<sup>1,2</sup>、榎山 周平<sup>1,2</sup>、西村 貞徳<sup>1,2</sup>、桐野 真吾<sup>1,2</sup>、黒田 顕慈<sup>1,2</sup>、大平 雅一<sup>1</sup> (大阪市立大・院・消化器外科、<sup>2</sup>大阪市立大・院・癌分子病態制御学)



**E9** Epigenetics  
 エピジェネティクス

Chairperson: Akihiko Yokoyama (Natl. Cancer Ctr. Tsuruoka Metabolomics Lab.)

座長: 横山 明彦 (国立がん研セ・がんメタボロミクス研究室)

- E9-1 Analysis of chromatin dynamics using permeabilized cells and reconstituted histone complex**  
 Hiroaki Tachiwara<sup>1</sup>, Hitoshi Kurumizaka<sup>2</sup>, Noriko Saitoh<sup>1</sup> (JFCR, <sup>2</sup>UTokyo IQB)  
 透過性細胞とヒストン複合体を用いたクロマチンダイナミクスの解析  
 立和名 博昭<sup>1</sup>、胡桃坂 仁志<sup>2</sup>、斎藤 典子<sup>1</sup> (1 (公財) がん研・研、<sup>2</sup>東京大・定量研)
- E9-2 Dissecting tumor heterogeneity and cancer cell plasticity in human breast cancer with chromatin accessibility profiling**  
 Reo Maruyama<sup>1,2</sup>, Kohei Kumegawa<sup>2</sup>, Sumito Saeki<sup>1,3</sup>, Yoko Takahashi<sup>2,3</sup>, Tomoyoshi Nakadai<sup>1</sup>, Tetsuo Noda<sup>4</sup>, Shinji Ohno<sup>2,5</sup>, Takayuki Ueno<sup>2,3</sup> (1Cancer Epignome, JFCR, <sup>2</sup>NEXT-Ganken, JFCR, <sup>3</sup>Breast Surg. Oncol., JFCR, <sup>4</sup>JFCR, <sup>5</sup>Breast Oncol. Ctr., JFCR)  
 ヒト乳がんの不均一性の解析  
 丸山 玲緒<sup>1,2</sup>、桑川 昂平<sup>2</sup>、佐伯 澄人<sup>1,3</sup>、高橋 洋子<sup>2,3</sup>、中太 智義<sup>1</sup>、野田 哲生<sup>4</sup>、大野 真司<sup>2,5</sup>、上野 貴之<sup>2,3</sup> (1 (公財) がん研・がんエピゲノム、<sup>2</sup> (公財) がん研・NEXT-Ganken、<sup>3</sup> (公財) がん研・有明病院・乳腺外科、<sup>4</sup> (公財) がん研、<sup>5</sup> (公財) がん研・有明病院・乳腺センター)
- E9-3 The E3 ubiquitin ligase complex APC/C<sup>CDC20</sup> attenuates myeloid leukemogenesis by counteracting the PR-DUB complex**  
 Shuheji Asada<sup>1,2</sup>, Reina Takeda<sup>2</sup>, Daichi Inoue<sup>3</sup>, Hiroaki Honda<sup>1</sup>, Susumu Goyama<sup>4</sup>, Toshio Kitamura<sup>2</sup> (1The Inst. of Lab. Animals, TWUMU, Tokyo, <sup>2</sup>Div. Cell. Therapy, IMSUT, Tokyo, <sup>3</sup>Dept. Hematology-Oncology, FBRI, Kobe, <sup>4</sup>Div. Mol. Oncology, CBMS, The Univ. of Tokyo, Tokyo)  
 E3 ユビキチンリガーゼ複合体 APC/C<sup>CDC20</sup> は PR-DUB 複合体と拮抗して、骨髄性白血病原性を減弱させる  
 浅田 修平<sup>1,2</sup>、竹田 玲奈<sup>2</sup>、井上 大地<sup>3</sup>、本田 浩章<sup>1</sup>、合山 進<sup>4</sup>、北村 俊雄<sup>2</sup> (1東京女子医大・医・実験動物研、<sup>2</sup>東京大・医科研・細胞療法分野、<sup>3</sup>神戸医療産業都市推進機構・血液腫瘍研究部、<sup>4</sup>東京大・CBMS 先進分子腫瘍学分野)
- E9-4 Precancerous nature of intestinal metaplasia with increased NOS2 expression and acerated DNA methylation induction**  
 Chihiro Takeuchi, Hideyuki Takeshima, Satoshi Yamashita, Toshikazu Ushijima (Div. Epigenomics, Natl. Cancer Ctr. Res. Inst.)  
 腸上皮化生は NOS2 発現の増加と DNA メチル化誘導の促進の前癌病変性をもつ  
 竹内 千尋、竹島 秀幸、山下 聡、牛島 俊和 (国立がん研セ・研・エピゲノム)
- E9-5 SETD6 is methylation-silenced in gastric cancers despite resistance of most epigenetic regulators to DNA methylation**  
 Hideyuki Takeshima, Kazuhiro Nishiyama, Toshikazu Ushijima (Div. Epigenomics, Natl. Cancer Ctr. Res. Inst.)  
 エピジェネティック制御因子は異常メチル化に抵抗性だが、SETD6 は胃がんにおいてメチル化サイレンシングされる  
 竹島 秀幸、西山 和宏、牛島 俊和 (国立がん研セ・研・エピゲノム)
- E9-6 To identify chemo-resistance related genes in the regulation of H3K27ac in ovarian cancer**  
 Asako Kukita<sup>1</sup>, Kenbun Sone<sup>1</sup>, Katsutoshi Oda<sup>2</sup>, Syuzo Kaneko<sup>3</sup>, Ryuji Hamamoto<sup>3</sup>, Saki Tanimoto<sup>4</sup>, Yusuke Toyohara<sup>1</sup>, Yu Takahashi<sup>1</sup>, Futaba Inoue<sup>1</sup>, Ayumi Taguchi<sup>1</sup>, Michihiro Tanikawa<sup>1</sup>, Tetsushi Tsuruga<sup>1</sup>, Yutaka Osuga<sup>1</sup> (1Dept. Obstetrics & Gynecol., The Univ. of Tokyo, <sup>2</sup>Dept. Integrated genomics, The Univ. of Tokyo, <sup>3</sup>Div. Mol. Modification & Cancer Biol., NCCRI.)  
 卵巣癌におけるヒストン H3 リシン K27 アセチル化が調節する化学療法抵抗性に関する遺伝子の探索  
 久木田 麻子<sup>1</sup>、曾根 献文<sup>1</sup>、織田 克利<sup>2</sup>、金子 修三<sup>3</sup>、浜本 隆二<sup>3</sup>、谷本 早紀<sup>1</sup>、豊原 佑典<sup>1</sup>、高橋 優<sup>1</sup>、井上 双葉<sup>1</sup>、田口 歩<sup>1</sup>、谷川 道洋<sup>1</sup>、鶴賀 哲史<sup>1</sup>、大須賀 穠<sup>1</sup> (1東京大・院医・産婦人科学、<sup>2</sup>東京大・院医・統合ゲノム学、<sup>3</sup>国立がん研セ・がん分子修飾制御学)

**E14-3** Cancer basic, diagnosis and treatment (3):  
 Pancreatic cancer  
 臓器がんの基礎・診断・治療 (3): 膵がん

Chairperson: Toru Furukawa (Dept. Invest Pathol, Tohoku Univ. Grad. Sch. Med.)

座長: 古川 徹 (東北大・院医・病態病理学)

- E14-3-1 Serum ferritin levels and their prognostic roles in pancreatic cancer**  
 Park Jimin<sup>1,2</sup>, Chenzou Mau<sup>2</sup>, Yenhao Su<sup>3</sup>, Hsinan Chen<sup>3</sup>, Jungsu Chang<sup>3</sup>, Chingfeng Chiu<sup>2,4</sup> (1Sch. of Nutrition & Health Sci., TMU, <sup>2</sup>Grad. Inst. of Metabolism & Obesity Sci., TMU, <sup>3</sup>Grad. Inst. of Clin. Med., TMU, <sup>4</sup>TMU Res. Ctr. of Cancer Translational Med., TMU)
- E14-3-2 Lymphocyte signature with lymphocyte surface marker is associated with patients' outcomes who underwent surgery for PDAC**  
 Shigeki Nakagawa, Yoichi Yamashita, Shinsei Yumoto, Daisuke Ogawa, Hiromitsu Hayashi, Katsunori Imai, Hideo Baba (GE surg. Kumamoto-U)  
 リンパ球表面マーカーを用いた Lymphocyte signature による膵癌の予後予測  
 中川 茂樹、山下 洋市、湯本 信成、小川 大輔、林 洋光、今井 克憲、馬場 秀夫 (熊本大・院・消化器外科)
- E14-3-3 Comprehensive molecular and immunological analyses of the tumor immune micro-environment in pancreatic cancer**  
 Hiroto Murakami<sup>1,2</sup>, Hirofumi Akita<sup>1</sup>, Masaya Higashiguchi<sup>1</sup>, Yuta Nagatsuka<sup>1,2</sup>, Takuto Nogimori<sup>1</sup>, Shokichi Takahama<sup>1</sup>, Shogo Kobayashi<sup>2</sup>, Yuichiro Doki<sup>2</sup>, Hidetoshi Eguchi<sup>2</sup>, Takuya Yamamoto<sup>1</sup> (1Lab. of Immunosenescence, Natl. Inst. of Biomed. Innovation Osaka, <sup>2</sup>Dept. Gastroenterological Surg. Grad. Sch. of Med. Osaka Univ.)  
 膵癌切除サンプルを用いた微小環境における免疫応答解析  
 村上 弘大<sup>1,2</sup>、秋田 裕史<sup>1</sup>、東口 公哉<sup>1</sup>、長束 佑太<sup>1,2</sup>、野木森 拓人<sup>1</sup>、高濱 正吉<sup>1</sup>、小林 省吾<sup>2</sup>、土岐 祐一郎<sup>2</sup>、江口 英利<sup>2</sup>、山本 拓也<sup>1</sup> (1医薬健康研・免疫老化プロジェクト、<sup>2</sup>大阪大・消化器外科)
- E14-3-4 C4BPA enhances antitumor immunity by the accumulation of tumor-infiltrating lymphocytes in pancreatic cancer.**  
 Shigetsugu Takano, Kosuke Sasaki, Masayuki Ohtsuka (Dept. General Surg., Sch., Med., Chiba Univ.)  
 C4BPA は膵癌微小環境内で細胞傷害性 T 細胞を集積し抗腫瘍効果を増強する。  
 高野 重紹、佐々木 巨亮、大塚 将之 (千葉大・医・臓器制御外科)
- E14-3-5 Hyperglycemia promotes epithelial mesenchymal transition in pancreatic cancer via YAP1/TAZ mediated metabolic changes**  
 Zhao Liu, Hiromitsu Hayashi, Kazuki Matsumura, Fumimasa Kitamura, Takayoshi Kaida, Shigeki Nakagawa, Kosuke Mima, Katsunori Imai, Yoichi Yamashita, Hideo Baba (Dept. Gastroenterol Surg., Kumamoto Univ.)  
 膵癌での高血糖による YAP1 / TAZ を介した代謝変化の検討  
 柳 昭、林 洋光、松村 和季、北村 文優、甲斐田 剛圭、中川 茂樹、美馬 浩介、今井 克憲、山下 洋市、馬場 秀夫 (熊本大・消化器外科)
- E14-3-6 The role of Regnase-1 in pancreatic cancer development and progression**  
 Junya Okabe, Takahiro Kodama, Teppei Yoshioka, Hayato Hikita, Ryotaro Sakamori, Tomohide Tatsumi, Tetsuo Takehara (Dept. Gastroenterology & Hepatology, Osaka Univ. Grad. Sch. of Med.)  
 Regnase-1 を介した膵癌進展機構の解明  
 岡部 純弥、小玉 尚宏、吉岡 鉄平、疋田 隼人、阪森 亮太郎、巽 智秀、竹原 徹郎 (大阪大・院医・消化器内科学)

E15-1  
Diagnosis (1)  
診断 (1)

Chairperson: Shinya Tanaka (Dept. Cancer Path., Faculty of Med., Hokkaido Univ.)

座長: 田中 伸哉 (北海道大・院医・腫瘍病理学)

E15-1-1 **Observing Deep Radiomics for the Classification of Glioma Grades**

Kazuma Kobayashi<sup>1,2</sup>, Motoraka Miyake<sup>3</sup>, Masamichi Takahashi<sup>4</sup>, Ryuji Hamamoto<sup>1,2</sup> (1)Div. Med. AI Res. Dev., Natl. Cancer Ctr. Res. Inst., 2Cancer Transl. Res. Team, RIKEN Ctr. for AIP project, 3Dept. Rad. Diag., Natl. Cancer Ctr. Hosp., 4Dept. NeuroSurg. & Neuro-oncology, Natl. Cancer Ctr. Hosp.)

グリオーマの悪性度分類に係る深層特徴量の抽出

小林 和馬<sup>1,2</sup>、三宅 基隆<sup>3</sup>、高橋 雅道<sup>4</sup>、浜本 隆二<sup>1,2</sup> (1)国立がん研セ・研・医療 AI 研究開発分野、2理研・革新知能統合研究セ・がん探索医療、3国立がん研セ・中央病院・放射線診断科、4国立がん研セ・中央病院・脳脊髄腫瘍科)

E15-1-2 **Imaging flow cytometry-based multiplex FISH for three IGH translocations for the precision medicine in multiple myeloma**

Junya Kuroda<sup>1</sup>, Taku Tsukamoto<sup>1</sup>, Masaki Kinoshita<sup>2</sup>, Kazuhiro Yamada<sup>3</sup>, Johji Inazawa<sup>3</sup> (1)Div. Hematol. & Oncol, Kyoto Pref. Univ. Med., 2Symbex corp., 3Med. Res. Inst. Tokyo Med. & Dent. Univ.)

多発性骨髄腫の個別化医療を加速する代表的染色体転座の画像化フローサイトメトリーによるマルチプレックス FISH 法

黒田 純也<sup>1</sup>、塚本 拓<sup>1</sup>、木下 将希<sup>2</sup>、山田 和宏<sup>2</sup>、稲澤 謙治<sup>3</sup> (1)京都府立医大・血液内科学、2シスメックス (株)、3東京医歯大・難治疾患研)

E15-1-3 **The extracellular fragments of a CADM1 variant isoform can be a serum marker for small-cell lung cancer**

Takeshi Ito<sup>1</sup>, Daisuke Matsubara<sup>1,2,3</sup>, Toko Funaki<sup>1</sup>, Kenji Tamura<sup>4</sup>, Takahide Nagase<sup>5</sup>, Yoshinori Murakami<sup>1</sup> (1)Div. Mol. Pathol., Inst. Med. Sci., Univ. Tokyo, 2Dept. Pathol., Jichi Med. Univ., 3Dept. Diag. Pathol., Fac. Med., Univ. Tsukuba, 4Innovative Cancer Ctr., Shimane Univ. Hosp., 5Dept. Resp. Med., Grad. Sch. Med., Univ. Tokyo)

CADM1 スプライシングバリエーションの細胞外領域断片は小細胞肺がんの血清マーカーとなり得る

伊東 剛<sup>1</sup>、松原 大祐<sup>1,2,3</sup>、船城 桐子<sup>1</sup>、田村 研治<sup>4</sup>、長瀬 隆英<sup>5</sup>、村上 善則<sup>1</sup> (1)東京大・医科研・人癌病因遺伝子、2自治医大・統合病理、3筑波大・医・診断病理、4島根大・医・先端がん治療セ、5東京大・院医・呼吸器内科)

E15-1-4 **Early dynamics of T cell clonotypes as potential surrogate biomarker for immune checkpoint inhibitors**

Taigo Kato<sup>1</sup>, Kazuma Kiyotani<sup>2</sup>, Akinaru Yamamoto<sup>1</sup>, Toshihiro Uemura<sup>3</sup>, Gaku Yamamichi<sup>1</sup>, Eisuke Tomiyama<sup>1</sup>, Yoko Koh<sup>1</sup>, Makoto Matsushita<sup>1</sup>, Koji Hatano<sup>1</sup>, Atsunari Kawashima<sup>1</sup>, Motohide Uemura<sup>1</sup>, Norio Nonomura<sup>1</sup> (1)Urology, Osaka Univ. Grad. Sch. of Med., 2Cancer Precision Med. Ctr., Japanese Foundation for Cancer Res.)

末梢血 T 細胞受容体レパトマ解析を用いた免疫チェックポイント阻害剤早期奏効予測バイオマーカーの開発

加藤 大悟<sup>1</sup>、清谷 一馬<sup>2</sup>、山本 顕生<sup>1</sup>、植村 俊彦<sup>1</sup>、山道 岳<sup>1</sup>、富山 栄輔<sup>1</sup>、洪 陽子<sup>1</sup>、松下 慎<sup>1</sup>、波多野 浩士<sup>1</sup>、河嶋 厚成<sup>1</sup>、植村 元秀<sup>1</sup>、野々村 祝夫<sup>1</sup> (1)大阪大・医・泌尿器科、2 (公財) がん研・がんプレシジョン医療研究セ)

E15-1-5 **Prediction of tissue origin of adenocarcinomas in the esophagogastric junction by DNA methylation**

Chundong Zhang<sup>1,2</sup>, Hideyuki Takeshima<sup>1</sup>, Satoshi Yamashita<sup>1</sup>, Yuyu Liu<sup>1</sup>, Naoko Hattori<sup>1</sup>, Tetsuo Ushiku<sup>3</sup>, Hitoshi Katai<sup>4</sup>, Hiroshi Makino<sup>5</sup>, Yasuyuki Seto<sup>3</sup>, Toshikazu Ushijima<sup>1</sup> (1)Div. Epigenomics, Natl. Cancer Ctr. Res. Inst., 2Dept. Gastrointestinal Surg., The Univ. of Tokyo, 3Dept. Path., The Univ. of Tokyo, 4Dept. Gastric Surg., Natl. Cancer Ctr. Hosp., 5Dept. Surg., Tama-Nagayama Hosp., Nippon Med. Sch.)

E15-1-6 **New Theory of Cancer Gene Data Analysis confirmed by 181 Microarrays-Four Universal Data Structures for Gene Diagnosis-Shuichi Shinmura** (Seikei Univ. Economic Dept.)

181 組の Microarrays で検証された癌の遺伝子データ解析の新理論-癌診断の重要な 4 つの普遍的なデーや構造-  
新村 秀一 (成蹊大・経済)

E15-2  
Diagnosis (2)  
診断 (2)

Chairperson: Siewkee Low (Cancer Precision Med. Ctr., JFCR)

座長: Siewkee Low (Cancer Precision Med. Ctr., JFCR)

E15-2-1 **A newly developed digital PCR primer/probe library for monitoring circulating tumor DNA**

Hayato Hiraki, Satoshi Nishizuka (Div. Biomed. Res. & Devel., Iwate Med. Univ.)

デジタル PCR プライマー-プローブライブラリを用いた血中循環腫瘍 DNA のモニタリング

開 勇人、西塚 哲 (岩手医大・医歯薬総合研・医療開発研究部門)

E15-2-2 **Circulating tumor DNA as versatile tumor marker in the treatment of pan-cancer**

Satoshi Nishizuka (Iwate Med. Univ., Inst. Biomed. Sci.)

がん治療における汎用腫瘍マーカーとしての血中腫瘍由来 DNA

西塚 哲 (岩手医大・医歯薬総合研・医療開発研究部門)

E15-2-3 **One day rapid identification of actionable mutations using liquid biopsy for precision oncology**

Hiuting Chan<sup>1</sup>, Yoonming Chin<sup>1</sup>, Masumi Otaki<sup>2</sup>, Ippei Fukada<sup>3,4</sup>, Naomi Hayashi<sup>2,4</sup>, Naoki Fukuda<sup>2</sup>, Shunji Takahashi<sup>2,4</sup>, Yusuke Nakamura<sup>1</sup>, Siewkee Low<sup>1</sup> (1)Cancer Precision Med. Ctr., JFCR, Tokyo, Japan, 2Dept. Med. Oncology, Cancer Inst. Hosp., JFCR, 3Breast Oncology Ctr., Cancer Inst. Hosp., JFCR, 4Dept. Genomic Med., Cancer Inst. Hosp., JFCR)

E15-2-4 **Intensive disease monitoring with circulating tumor DNA using digital PCR in patients with esophageal cancer**

Takeshi Iwaya<sup>1</sup>, Satoshi Nishizuka<sup>2</sup> (1)Dept. Surg., Iwate Med. Univ., 2Div. BioMed. Res. & Development, Iwate Med. Univ.)

食道癌患者診療における digital PCR を用いた ctDNA モニタリング

岩谷 岳<sup>1</sup>、西塚 哲<sup>2</sup> (1)岩手医大・医・外科、2)岩手医大・医歯薬総合研・医療開発研究部門)

E15-2-5 **Extracellular vesicles expressing CEACAM antigens in the urine of bladder cancer patients**

Ko Igami<sup>1,2,3</sup>, Takeshi Uchiyama<sup>3,4</sup>, Masaki Shiota<sup>5</sup>, Shigehiro Tsukahara<sup>3</sup>, Masatoshi Eto<sup>3</sup> (1)Clin. Lab. Business Segment, LSI Medience Corp., 2Kyushu Pro Search LLP, 3Dept. Clin. Chem. Lab. Med., Kyushu Univ., 4Dept. Health Sci., Kyushu Univ., 5Dept. Urol., Kyushu Univ.)

膀胱癌患者の尿中に存在する CEACAM 抗原を表出した細胞外小胞

伊神 恒<sup>1,2,3</sup>、内海 健<sup>3,4</sup>、塩田 真己<sup>5</sup>、塚原 茂大<sup>5</sup>、江藤 正俊<sup>5</sup> (1) (株) LSI メディエンス 臨床検査事業本部、2九州プロサーチ有限責任事業組合、3九州大・医・臨床検査医学、4九州大・医・保健学、5九州大・医・泌尿器科)

E15-2-6 **Exosomal DNA has the potential to detect tumor heterogeneity in patients with colorectal cancer**

Sho Kuriyama, Takeshi Yamada, Akihisa Matsuda, Seiichi Shinji, Hiromichi Sonoda, Ryo Ohta, Kazuhide Yonaga, Takuma Iwai, Kohki Takeda, Koji Ueda, Toshimitsu Miyasaka, Hiroshi Yoshida (Nippon Med. Sch., Dept. Digestive Surg.)

大腸癌患者における Exosomal DNA による KRAS 変異検出

栗山 翔、山田 岳史、松田 明久、進士 誠一、園田 寛道、太田 竜、代永 和秀、岩井 拓磨、武田 幸樹、上田 康二、宮坂 俊光、吉田 寛 (日本医大・消化器外科)

**J12-1 Cancer immunity (1)**  
がん免疫 (1)

Chairperson: Hisashi Wada (Dept. Clin. Res. in Tumor Immunol., Osaka Univ. Grad. Sch. of Med.)  
座長：和田 尚 (大阪大・院医・臨床腫瘍免疫学)

**J12-1-1 Immuno-regulatory role of PP2A on anti-tumor effector function of NK cells**

Yui Yamamac<sup>1</sup>, Manabu Kawada<sup>2</sup>, Yoshihiro Hayakawa<sup>1</sup> (<sup>1</sup>Inst. of Natural Med., Univ. of Toyama, <sup>2</sup>Lab. of Oncol., Inst. of Microbial Chem.)

PP2AによるNK細胞の抗腫瘍エフェクター機能の制御  
山前 結<sup>1</sup>、川田 学<sup>2</sup>、早川 芳弘<sup>1</sup> (富山大・和漢研、<sup>2</sup>微化研・第1生物)

**J12-1-2 Impact of anti-SIRPα antibodies on Langerhans cell histiocytosis**

Takeshi Okamoto<sup>1,2</sup>, Yoji Murata<sup>1</sup>, Daisuke Hazama<sup>1</sup>, Mariko Sakamoto<sup>1</sup>, Yuka Kakuchi<sup>1</sup>, Daisuke Tanaka<sup>1</sup>, Shigeto Masuda<sup>1</sup>, Yasuyuki Saito<sup>1</sup>, Takenori Kotani<sup>1</sup>, Yoshimasa Maniwa<sup>2</sup>, Takashi Matozaki<sup>1</sup> (<sup>1</sup>Div. Mol. & Cell. Signal., Kobe Univ. Grad. Sch. Med., <sup>2</sup>Div. Gen. Thorac. Surg., Kobe Univ. Grad. Sch. Med.)

ランゲルハンス細胞腫瘍に対する抗SIRPα抗体の効果  
岡本 武士<sup>1,2</sup>、村田 陽二<sup>1</sup>、羽間 大祐<sup>1</sup>、坂本 茉莉子<sup>1</sup>、角地 宥香<sup>1</sup>、田中 大介<sup>1</sup>、増田 重人<sup>1</sup>、齋藤 泰之<sup>1</sup>、小谷 武徳<sup>1</sup>、眞庭 謙昌<sup>2</sup>、的崎 尚<sup>1</sup> (神戸大・院医・シグナル統合学、<sup>2</sup>神戸大・院医・呼吸器外科学)

**J12-1-3 Crucial roles of IFN-STAT1 signal pathway in induction of anti-tumor effector cells in tumor-bearing host**

Hidemitsu Kitamura<sup>1</sup>, Weidong Shen<sup>1</sup>, Xiangdong Wang<sup>1</sup>, Shunsuke Shichi<sup>1,2</sup>, Saori Kimura<sup>1,2</sup>, Ko Sugiyama<sup>1,2</sup>, Akinobu Taketomi<sup>2</sup> (<sup>1</sup>Div. Functional Immunol., Inst. Genetic Med., Hokkaido Univ., <sup>2</sup>Dept. Gastroenterol. Surg. I, Hokkaido Univ., Grad. Sch. Med.)

担がん宿主の抗腫瘍エフェクター細胞の誘導におけるIFN-STAT1信号伝達経路の重要性  
北村 秀光<sup>1</sup>、沈 輝棟<sup>1</sup>、王 向東<sup>1</sup>、志智 俊介<sup>1,2</sup>、木村 沙織<sup>1,2</sup>、杉山 昂<sup>1,2</sup>、武富 紹信<sup>2</sup> (北海道大・遺制研・免疫機能学、<sup>2</sup>北海道大・院医・消化器外科学)

**J12-1-4 Metabolite secretome of necrotic tumor cells contributes to T cell dysfunction in cancer**

Sana Hibino, Hideyuki Yanai (Dept. Inflammolgy, RCAST, The Univ. of Tokyo)

ネクローシス癌細胞の代謝物セクレトームが、癌におけるT細胞の機能不全に関与する  
日比野 沙奈、柳井 秀元 (東京大・先端研・炎症疾患)

**J12-1-5 Transforming growth factor-β inhibitor is a candidate drug for immunotherapy of oral squamous cell carcinoma**

Yutaro Kondo<sup>1</sup>, Taishi Takahara<sup>2</sup>, Shoya Ono<sup>1</sup>, Mitsuo Goto<sup>1</sup>, Tetsuya Ogawa<sup>3</sup>, Hideaki Ito<sup>4</sup>, Akira Sato<sup>2</sup>, Toyonori Tsuzuki<sup>2</sup>, Kazuhiro Yoshikawa<sup>3</sup>, Ryuzo Ueda<sup>5</sup>, Susumu Suzuki<sup>5,6</sup> (<sup>1</sup>Aichi Gakuin Univ. Maxillofacial Surg., <sup>2</sup>Aichi Med. Univ. Surg. Pathol., <sup>3</sup>Aichi Med. Univ. Otorhinolaryngology, <sup>4</sup>Aichi Med. Univ. Pathol., <sup>5</sup>Aichi Med. Univ. Res. Creation Support Ctr., <sup>6</sup>Aichi Med. Univ. Tumor Immunol.)

口腔扁平上皮癌の免疫療法におけるTGF-β阻害剤の有用性  
近藤 祐太郎<sup>1</sup>、高原 大志<sup>2</sup>、小野 翔矢<sup>1</sup>、後藤 満雄<sup>1</sup>、小川 徹也<sup>3</sup>、伊藤 秀明<sup>4</sup>、佐藤 啓<sup>2</sup>、都築 豊徳<sup>2</sup>、吉川 和宏<sup>5</sup>、上田 龍三<sup>6</sup>、鈴木 進<sup>5,6</sup> (愛知学院大・顎顔面外科、<sup>2</sup>愛知医大・病理診断科、<sup>3</sup>愛知医大・耳鼻咽喉科、<sup>4</sup>愛知医大・病理学講座、<sup>5</sup>愛知医大・研究創出支援セ、<sup>6</sup>愛知医大・腫瘍免疫学講座)

**J12-1-6 The potential prognostic benefit of pre-operative eradication therapy to Helicobacter pylori infection on gastric cancer**

Takuro Saito<sup>1,2</sup>, Shinya Urakawa<sup>1,2</sup>, Hisashi Wada<sup>2</sup>, Kotaro Yamashita<sup>1</sup>, Koji Tanaka<sup>1</sup>, Kazuyoshi Yamamoto<sup>1</sup>, Tomoki Makino<sup>1</sup>, Tsuyoshi Takahashi<sup>1</sup>, Yukinori Kurokawa<sup>1</sup>, Hidetoshi Eguchi<sup>1</sup>, Yuichiro Doki<sup>1</sup> (<sup>1</sup>Dept. Gastroenterol. Surg., Osaka Univ., <sup>2</sup>Dept. Clin. Res. in Tumor Immunol., Osaka Univ.)

胃癌術前 Helicobacter pylori 除菌が胃癌の予後に与える影響  
西塔 拓郎<sup>1,2</sup>、浦川 真哉<sup>1,2</sup>、和田 尚<sup>2</sup>、山下 公太郎<sup>1</sup>、田中 晃司<sup>1</sup>、山本 和義<sup>1</sup>、牧野 知紀<sup>1</sup>、高橋 剛<sup>1</sup>、黒川 幸典<sup>1</sup>、江口 英利<sup>1</sup>、土岐 祐一郎<sup>1</sup> (大阪大・医・消化器外科、<sup>2</sup>大阪大・医・臨床腫瘍免疫学)

**J12-2 Cancer immunity (2)**  
がん免疫 (2)

Chairperson: Yuka Maeda (Natl. Cancer Ctr. Res. Inst.)  
座長：前田 優香 (国立がん研セ・研)

**J12-2-1 Proteogenomic neoantigen identification and reactive TCR analysis reveal the antigenic landscape of CRC tissues**

Serina Tokita<sup>1,2</sup>, Takayuki Kanaseki<sup>1</sup>, Kenji Murata<sup>1</sup>, Munehide Nakatsugawa<sup>3</sup>, Tomomi Hirama<sup>1,2</sup>, Noriyuki Sato<sup>1</sup>, Fumitake Hata<sup>2</sup>, Toshihiko Torigoe<sup>1</sup> (<sup>1</sup>Dept. Pathol., Sapporo Med. Univ., <sup>2</sup>Sapporo Dohto Hosp., <sup>3</sup>Dept. Pathol., Tokyo Med. Univ. Hachioj Med. Ctr.)  
プロテオゲノミクスHLAリガンドーム解析による大腸がん組織ネオアンチゲン同定と反応TCR解析  
時田 芹奈<sup>1,2</sup>、金関 貴幸<sup>1</sup>、村田 憲治<sup>1</sup>、中津川 宗秀<sup>3</sup>、平間 知美<sup>1,2</sup>、佐藤 昇志<sup>1</sup>、秦 史壯<sup>2</sup>、鳥越 俊彦<sup>1</sup> (札幌医大・第一病理、<sup>2</sup>札幌道都病院、<sup>3</sup>東京医大・八王子医療セ・病理診断科)

**J12-2-2 Immune responses against immunogenic neoantigens enable to break the resistance to immune checkpoint inhibitors**

Daisuke Sugiyama<sup>1</sup>, Tomoaki Muramatsu<sup>1</sup>, Takuro Noguchi<sup>2</sup>, Shinichiro Kato<sup>1</sup>, Kunihiko Hinohara<sup>1</sup>, Hiroyoshi Nishikawa<sup>1,3</sup> (<sup>1</sup>Dept. Immunol., Nagoya Univ. Grad. Sch. of Med., <sup>2</sup>Dept. Med. Oncology, Hokkaido Univ. Grad. Sch. of Med., <sup>3</sup>Div. Cancer Immunol., Res. Inst., Natl. Cancer Ctr.)

強免疫原性ネオアンチゲンの出現は抗腫瘍免疫応答を増強し免疫チェックポイント阻害剤抵抗性を打破する  
杉山 大介<sup>1</sup>、村松 知昭<sup>1</sup>、野口 卓郎<sup>2</sup>、大藤 真一郎<sup>1</sup>、日野原 邦彦<sup>1</sup>、西川 博嘉<sup>1,3</sup> (名古屋大・分子細胞免疫学、<sup>2</sup>北海道大・腫瘍内科学、<sup>3</sup>国立がん研セ・腫瘍免疫研究分野)

**J12-2-3 R1plet regulates effector function of CD8 T cells and suppresses T cell-mediated anti-tumor immune responses**

Asuka Iwamoto<sup>1</sup>, Hirotake Tsukamoto<sup>1,2</sup>, Hideki Nakayama<sup>3</sup>, Hiroyuki Oshiumi<sup>1</sup> (<sup>1</sup>Dept. Immunol. Grad. Sch. Kumamoto Univ., <sup>2</sup>Div. Clin. Immunol. & Cancer Immunotherapy, CCIL, Kyoto Univ., <sup>3</sup>Dept. Oral & Maxillofacial Surg. Kumamoto Univ.)

E3ユビキチンリガーゼR1pletはCD8T細胞のエフェクター機能を抑制し、T細胞を介した抗腫瘍免疫応答を抑制する  
岩本 明日香<sup>1</sup>、塚本 博丈<sup>1,2</sup>、中山 秀樹<sup>3</sup>、押海 裕之<sup>1</sup> (熊本大・免疫学、<sup>2</sup>京都大・がん免疫総合研セ・治療臨床免疫学、<sup>3</sup>熊本大・歯科口腔外科)

**J12-2-4 Single-cell analysis of immune cells in tumor reveals the function of resident memory T cells in colorectal tumor**

Masatoshi Kitakaze<sup>1,2,3</sup>, Masamitsu Konno<sup>3,5</sup>, Ayumu Asai<sup>2,3</sup>, Ryota Chijimatsu<sup>2,3</sup>, Shiki Fujino<sup>1</sup>, Takayuki Ogino<sup>1</sup>, Hidekazu Takahashi<sup>1</sup>, Norikatsu Miyoshi<sup>1</sup>, Mamoru Uemura<sup>1</sup>, Taroh Satoh<sup>2</sup>, Tsunekazu Mizushima<sup>1</sup>, Yuichiro Doki<sup>1</sup>, Hidetoshi Eguchi<sup>1</sup>, Hideshi Ishii<sup>1</sup> (<sup>1</sup>Gastroenterological Surg., Osaka Univ. Sch. of Med., <sup>2</sup>Cancer Frontier Sci. for Chemother., Osaka Univ. Sch. of Med., <sup>3</sup>Med. Data Sci., Osaka Univ. Sch. of Med.)

大腸がん腫瘍内微小環境におけるTissue resident memory T cellsの役割  
北風 雅敏<sup>1,2,3</sup>、今野 雅允<sup>2,3</sup>、浅井 歩<sup>2,3</sup>、千々松 良太<sup>2,3</sup>、藤野 志季<sup>1</sup>、荻野 崇之<sup>1</sup>、高橋 秀和<sup>1</sup>、三吉 範克<sup>1</sup>、植村 守<sup>1</sup>、佐藤 太郎<sup>2</sup>、水島 恒和<sup>1</sup>、土岐 祐一郎<sup>1</sup>、江口 英利<sup>1</sup>、石井 秀始<sup>1</sup> (大阪大・院医・消化器外科、<sup>2</sup>大阪大・先進癌薬物療法開発学、<sup>3</sup>大阪大・疾患データサイエンス学)

**J12-2-5 HANG cancer vaccine rejects anti PD-1 therapy resistant-tumor via potent neoantigen-specific CTL in draining lymph node**

Fumiyasu Momose<sup>1</sup>, Takashi Nakai<sup>2</sup>, Koji Shiraki<sup>2</sup>, Keisuke Fukumoto<sup>3</sup>, Toru Katsumata<sup>3</sup>, Kohei Yabuuchi<sup>3</sup>, Daisuke Muraoka<sup>4</sup>, Hiroaki Ikeda<sup>4</sup>, Hiroshi Shiku<sup>1</sup> (<sup>1</sup>Dept. Personalized Cancer Immunother., Mie Univ., Grad., Sch. Med., <sup>2</sup>Res. Div., Chugai Pharm. Co., Ltd., <sup>3</sup>New Product Development Office, Functional Additives Div., Asahi Kasei Corp., <sup>4</sup>Dept. Oncol., Nagasaki Univ. Grad. Sch. Biomed. Sci.)

ヒアルロン酸ナノゲルワクチンは所属リンパ節で強力にネオアンチゲン特異的CTLを誘導し抗PD-1治療抵抗性腫瘍を消失させる  
百瀬 文康<sup>1</sup>、中井 貴士<sup>2</sup>、白木 広治<sup>2</sup>、福本 圭介<sup>3</sup>、勝又 徹<sup>3</sup>、藪内 昂平<sup>3</sup>、村岡 大輔<sup>4</sup>、池田 裕明<sup>4</sup>、珠玖 洋<sup>1</sup> (三重大・院医・個別化がん免疫治療学、<sup>2</sup>中外製薬(株)研究本部、<sup>3</sup>旭化成 添加剤事業部 新製品開発推進室、<sup>4</sup>長崎大・院医歯薬 腫瘍医学)

**J12-2-6 Epigenetic modification of antitumor T cells for optimal adoptive immunotherapy**

Toshiaki Yoshikawa<sup>1</sup>, Zhiwen Wu<sup>1</sup>, Hirokazu Matsushita<sup>2</sup>, Waki Hosoda<sup>3</sup>, Shiro Suzuki<sup>4</sup>, Yuki Kagoya<sup>1</sup> (<sup>1</sup>Div. Immune Response, Aichi Cancer Ctr., <sup>2</sup>Div. Translational Onco Immunol., Aichi Cancer Ctr., <sup>3</sup>Dept. Path. & Mol. Diagnostics, Aichi Cancer Ctr., <sup>4</sup>Dept. Gynecologic Oncology, Aichi Cancer Ctr.)

**エピジェネティック因子修飾による抗腫瘍T細胞の機能改善**

吉川 聡明<sup>1</sup>、呉 智聞<sup>1</sup>、松下 博和<sup>2</sup>、細田 和貴<sup>3</sup>、鈴木 史朗<sup>4</sup>、籠谷 勇紀<sup>1</sup> ( <sup>1</sup>愛知県がんセ・腫瘍免疫応答、<sup>2</sup>愛知県がんセ・腫瘍免疫TR、<sup>3</sup>愛知県がんセ・遺伝子病理診断、<sup>4</sup>愛知県がんセ・婦人科部)

Room 11 Sep. 30 (Thu.) 13:00-14:15

J

**J14-4 Cancer basic, diagnosis and treatment (4): Gastric cancer**  
臓器がんの基礎・診断・治療 (4) : 胃がんChairperson: Haruhiko Sugimura (Hamamatsu Univ. Sch. of Med.)  
座長: 村村 春彦 (浜松医科大学)**J14-4-1 PD-L1/IDO1 expression and tumor-infiltrating lymphocyte (TIL) in solid type poorly differentiated gastric adenocarcinoma**  
Shinichiro Kawatoko, Kenichi Kohashi, Taisuke Sasaki, Yoshino Oda (Dept. Anatomic Path., Kyushu Univ.)胃充実型低分化腺癌におけるPD-L1, IDO1の発現と腫瘍浸潤リンパ球についての検討  
川床 慎一郎、孝橋 賢一、佐々木 泰介、小田 義直 (九州大・院形・態機能病理学)**J14-4-2 Single-cell transcriptome analysis of human normal and metaplastic gastric mucosa**Ayumu Tsubosaka<sup>1</sup>, Daisuke Komura<sup>1</sup>, Hiroto Katoh<sup>1</sup>, Tetsuo Ushiku<sup>2</sup>, Shumpei Ishikawa<sup>1</sup> (<sup>1</sup>Dept. Prev. Med., Grad. Sch. Med., The Univ. of Tokyo, <sup>2</sup>Dept. Pathol., Grad. Sch. Med., The Univ. of Tokyo)  
ヒト正常及び化生胃粘膜組織のシングルセルトランスクリプトーム解析  
坪坂 歩<sup>1</sup>、河村 大輔<sup>1</sup>、加藤 洋人<sup>1</sup>、牛久 哲男<sup>2</sup>、石川 俊平<sup>1</sup> (東京大・医・衛生学、<sup>2</sup>東京大・医・人体病理学)**J14-4-3 Mutations and progression-related factors of tetsunagi-type gastric cancers**Hirofumi Rokutan<sup>1,2</sup>, Yasuhito Arai<sup>2</sup>, Akiko Kunita<sup>1</sup>, Yasushi Totoki<sup>2</sup>, Fumie Hosoda<sup>2</sup>, Tatsuhiro Shibata<sup>2</sup>, Tetsuo Ushiku<sup>1</sup> (<sup>1</sup>Dept. Pathol., Grad. Sch. Med., The Univ. of Tokyo, <sup>2</sup>Div. Cancer Genomics, Natl. Cancer Ctr. Res. Inst.)手つなぎ型胃癌のゲノム異常・病理像・進展形式の解析  
六反 啓文<sup>1,2</sup>、新井 康仁<sup>2</sup>、国田 朱子<sup>1</sup>、十時 泰<sup>2</sup>、細田 文恵<sup>2</sup>、柴田 龍弘<sup>2</sup>、牛久 哲男<sup>1</sup> (東京大・院医・人体病理学・病理診断学、<sup>2</sup>国立がん研セ・研・がんゲノミクス)**J14-4-4 Lectin-drug conjugate therapy for gastric cancer with MUC6 mutation**Junya Arai, Yoku Hayakawa, Nobumi Suzuki, Keisuke Tateishi, Kazuhiko Koike (The Univ. of Tokyo Hosp., Dept. Gastroenterology)  
MUC6 変異を有する胃癌に対するレクチン薬剤複合体の抗癌作用の検討  
新井 絢也、早河 翼、鈴木 信三、立石 敬介、小池 和彦 (東京大・医附属病院・消化器内科)**J14-4-5 The relationship between double minute amplification of HER2 and HER2 genetic heterogeneity in gastric cancer**Kazuki Kanayama<sup>1,3</sup>, Hiroshi Imai<sup>2</sup>, Chise Matsuda<sup>3</sup>, Yoshifumi Hirokawa<sup>3</sup>, Masatoshi Watanabe<sup>3</sup> (<sup>1</sup>Dept. Clin. Nutr., Suzuka Univ. Med. Sci., <sup>2</sup>Path. Div., Mie Univ. Hosp., <sup>3</sup>Dept. Oncologic Path., Mie Univ. Grad. Sch. Med.)胃癌でのダブルミニニュートによるHER2遺伝子増幅とHER2腫瘍内遺伝的不均一性の関連性について  
金山 和樹<sup>1,3</sup>、今井 裕<sup>2</sup>、松田 知世<sup>3</sup>、広川 佳史<sup>3</sup>、渡邊 昌俊<sup>3</sup> (鈴鹿医療科学大・保健衛生・医療栄養学科、<sup>2</sup>三重大・医附属病院・病理診断科、<sup>3</sup>三重大・院医・腫瘍病理学)**J14-4-6 Diagnostic ability of miR148a methylation combination with AI-based endoscopy for gastric indefinite dysplasia diagnosis**Yoshiyuki Watanabe<sup>1,2,3</sup>, Ritsuko Oikawa<sup>1</sup>, Ichiro Oda<sup>2</sup>, Seiji Futagami<sup>2</sup>, Hiroyuki Yamamoto<sup>1,5</sup>, Tomohiro Tada<sup>4</sup>, Fumio Itoh<sup>1</sup> (<sup>1</sup>St. Marianna Univ. Sch. of Med. Div. Gastrol., <sup>2</sup>Kawasaki Rinko General Hosp. Dept. Internal Med., <sup>3</sup>Nippon Med. Sch. Div. Gastrol., <sup>4</sup>Tada Tomohiro Inst. of Gastroenterol. & Proctol., <sup>5</sup>Dept. Bioinformatics, St. Marianna Univ., Grad. Sch. Med.)分子マーカーとAI内視鏡診断によるGroup2胃がん診断への応用  
渡邊 嘉行<sup>1,2,3</sup>、及川 律子<sup>1</sup>、小田 一郎<sup>2</sup>、二神 生爾<sup>3</sup>、山本 博幸<sup>1,5</sup>、多田 智裕<sup>4</sup>、伊東 文生<sup>1</sup> (聖マリアンナ医大・消化器・肝臓内科、<sup>2</sup>総合川崎臨港病院・内科、<sup>3</sup>日本医大・消化器内科、<sup>4</sup>ただともひろ胃腸科肛門科、<sup>5</sup>聖マリアンナ医大・院医・バイオインフォマティクス)

Room 11 Sep. 30 (Thu.) 14:15-15:30

J

**J14-5 Cancer basic, diagnosis and treatment (5): Esophageal cancer, colorectal cancer**  
臓器がんの基礎・診断・治療 (5) : 食道がん・大腸がんChairperson: Eiji Oki (Dept. Surg. & Sci., Kyushu Univ. Grad. Sch. of Med.)  
座長: 沖 英次 (九州大・院医・消化管・総合外科)**J14-5-1 AI analysis of general clinical information to create stratification to replace TNM classification of esophageal cancer**Naoki Kuwayama<sup>1</sup>, Isamu Hoshino<sup>1</sup>, Yosuke Iwatate<sup>2</sup>, Fumitaka Ishige<sup>2</sup>, Hiroki Nagase<sup>3</sup> (<sup>1</sup>Div. Gastroentero. Surg., Chiba Can. Ctr., <sup>2</sup>Dept. Hepatobiliary & Pancreatic Surg., Chiba Can. Ctr., <sup>3</sup>Lab. of Can. Genetics, Chiba Can. Ctr. Res. Inst.)一般臨床情報を利用したAIによる食道癌のTNM分類に代わる層別化の試み  
桑山 直樹<sup>1</sup>、星野 敢<sup>1</sup>、岩立 陽祐<sup>2</sup>、石毛 文隆<sup>2</sup>、永瀬 浩吉<sup>3</sup> (千葉県がんセ・食道・胃腸外科、<sup>2</sup>千葉県がんセ・肝胆膵外科、<sup>3</sup>千葉県がんセ・腫瘍ゲノム研究室)**J14-5-2 Copy Number Signatures can help to predict the response of Esophageal Squamous Cell Carcinoma to NAC**Shota Sasagawa<sup>1</sup>, Masashi Fujita<sup>1</sup>, Seiya Imoto<sup>2</sup>, Hiroaki Kato<sup>3</sup>, Takushi Yasuda<sup>3</sup>, Hidewaki Nakagawa<sup>1</sup> (<sup>1</sup>Lab. for Cancer Genomics, RIKEN Ctr. for Integrative Med. Sci., <sup>2</sup>Inst. of Med. Sci., The Univ. of Tokyo, <sup>3</sup>Dept. Surg., Kinki Univ. Sch. of Med.)コピー数シグネチャーは食道扁平上皮癌の化学療法反応を予測するのに役立つ  
笹川 翔太<sup>1</sup>、藤田 征志<sup>1</sup>、井元 清哉<sup>2</sup>、加藤 寛章<sup>3</sup>、安田 卓司<sup>3</sup>、中川 英刀<sup>1</sup> (理研・生命医科学研究セ、<sup>2</sup>東京大・医・近畿大・医・外科)**J14-5-3 Blockade of CCR1+ myeloid cells suppresses colorectal cancer progression in syngeneic mouse models.**

Kenji Kawada, Yoshiro Itatani, Shigeru Tsunoda, Kazutaka Obama (Dept. Surg., Kyoto Univ.)

マウスモデルにおけるCCR1阻害は大腸癌進展を抑制する  
河田 健二、板谷 喜朗、角田 茂、小濱 和貴 (京都大・消化管外科)**J14-5-4 Identification of intrinsic resistance mechanisms to KRAS-G12C inhibitor using patient derived colorectal cancer cells**Kohei Maruyama<sup>1,2</sup>, Yuki Shimizu<sup>1,2</sup>, Mai Suzuki<sup>1,2</sup>, Tomoko Ohhara<sup>1</sup>, Naoya Fujita<sup>4</sup>, Satoshi Nagayama<sup>3</sup>, Ryohei Katayama<sup>1</sup> (<sup>1</sup>Div. Exp. Chemother., Cancer Chemother. Ctr., JFCR, <sup>2</sup>Dept. CBMS, Grad. Sch. Front. Sci., The Univ. of Tokyo, <sup>3</sup>Dept. Gastroenterological Surg., Cancer Inst. Hosp., JFCR, <sup>4</sup>Cancer Chemother. Ctr., JFCR)KRAS G12C 変異陽性大腸がんにおける初期耐性関連因子候補の同定  
丸山 航平<sup>1,2</sup>、清水 裕貴<sup>1,2</sup>、鈴木 麻衣<sup>1,2</sup>、大原 智子<sup>1</sup>、藤田 直也<sup>4</sup>、長山 聡<sup>3</sup>、片山 量平<sup>1</sup> (1 (公財) がん研・化療セ・基礎研究部、<sup>2</sup>東京大・新領域・メディカル情報生命、<sup>3</sup> (公財) がん研・有明病院・大腸外科、<sup>4</sup> (公財) がん研・化療セ)**J14-5-5 Overcoming Cancer Heterogeneity in Therapeutic Selection Using AI and Radiogenomics**Isamu Hoshino<sup>1</sup>, Yosuke Iwatate<sup>2</sup>, Fumitaka Ishige<sup>2</sup>, Naoki Kuwayama<sup>1</sup>, Hiroki Nagase<sup>3</sup> (<sup>1</sup>Div. Gastroentero. Surg., Chiba Can. Ctr., <sup>2</sup>Dept. Hepatobiliary & Pancreatic Surg., Chiba Can. Ctr., <sup>3</sup>Lab. of Can. Genetics, Chiba Can. Ctr.)AIとRadiogenomicsを応用した治療薬選択における癌不均一性の克服  
星野 敢<sup>1</sup>、岩立 陽祐<sup>2</sup>、石毛 文隆<sup>2</sup>、桑山 直樹<sup>1</sup>、永瀬 浩吉<sup>3</sup> (千葉県がんセ・食道・胃腸外科、<sup>2</sup>千葉県がんセ・肝胆膵外科、<sup>3</sup>千葉県がんセ・腫瘍ゲノム研究室)**J14-5-6 Clinicopathological and molecular characterization of deficient mismatch repair colorectal cancer**Atsushi Yamada<sup>1</sup>, Kenji Kawada<sup>2</sup>, Hiroshi Seno<sup>3</sup>, Shinya Ohashi<sup>1</sup>, Manabu Muto<sup>1</sup> (<sup>1</sup>Kyoto Univ. Hosp. Dept. Clin. Oncology, <sup>2</sup>Kyoto Univ. Hosp. Dept. Surg., <sup>3</sup>Kyoto Univ. Hosp. Dept. Gastroenterology & Hepatology)ミスマッチ修復機能欠損を示す大腸癌の臨床病理学および分子変化の特徴についての検討  
山田 敦<sup>1</sup>、河田 健二<sup>2</sup>、妹尾 浩<sup>3</sup>、大橋 真也<sup>1</sup>、武藤 学<sup>1</sup> (京都大附属病院・腫瘍内科、<sup>2</sup>京都大附属病院・消化管外科、<sup>3</sup>京都大附属病院・消化器内科)

J2-1

## Experimental animal models and genetically-engineered animals (1)

動物モデル・遺伝子改変動物 (1)

Chairperson: Hiroaki Honda (The Inst. of Lab. Animals, TWMU)

座長: 本田 浩章 (東京女子医大・実験動物研)

## J2-1-1 Identification of colitis associated cancer genes by Sleeping Beauty mutagenesis screening

Kana Shimomura<sup>1,2</sup>, Haruna Takeda<sup>1</sup> (<sup>1</sup>Natl. Cancer Ctr., <sup>2</sup>Kitasato Univ.)

Sleeping Beauty トランスポゾンを用いた大腸炎関連がん遺伝子の同定

下村 奏<sup>1,2</sup>、武田 はるな<sup>1</sup> (<sup>1</sup>国立がん研セ・研、<sup>2</sup>北里大)J2-1-2 A functional SNP in the 3'UTR of *Pak1* regulates alternative polyadenylation and affects skin cancer susceptibilityKazuhiro Okumura<sup>1</sup>, Megumi Saito<sup>1</sup>, Eriko Isogai<sup>1</sup>, Kimi Araki<sup>2</sup>, Yuichi Wakabayashi<sup>1</sup> (<sup>1</sup>Div. Exp. Anim. Res., Chiba Cancer Ctr. Res. Inst., <sup>2</sup>Div. Dev. Genetics., Dev. & Analysis, Univ. Kumamoto)*Pak1* の 3'UTR 多型は代替ポリアデニル化を制御しマウス皮膚がん感受性に影響を与える奥村 和弘<sup>1</sup>、齋藤 慈<sup>1</sup>、磯貝 恵理子<sup>1</sup>、荒木 喜美<sup>2</sup>、若林 雄一<sup>1</sup> (<sup>1</sup>千葉がんセ・研 実験動物、<sup>2</sup>熊本大・生命資源 疾患モデル)J2-1-3 Mouse esophageal cancer model induced by alcohol in *Krt5*-specific p53 conditional knockout mice with *Aldh2* dysfunction.Yuki Kondo<sup>1</sup>, Shinya Ohashi<sup>1</sup>, Seiji Naganuma<sup>2</sup>, Tomoki Saito<sup>1</sup>, Yosuke Mitani<sup>1</sup>, Osamu Kikuchi<sup>1</sup>, Manabu Muto<sup>1</sup> (<sup>1</sup>Dept. Therapeutic Oncology, Grad. Sch. of Med., Kyoto Univ., <sup>2</sup>Dept. Pathol., Sch. of Med., Kochi Univ.)*Aldh2* 機能障害を有する *Krt5* 特異的 p53 コンディショナルノックアウトマウスでアルコールにより誘発されるマウス食道癌モデル近藤 雄紀<sup>1</sup>、大橋 真也<sup>1</sup>、長沼 誠二<sup>2</sup>、齋藤 伴樹<sup>1</sup>、三谷 洋介<sup>1</sup>、菊池 理<sup>1</sup>、武藤 学<sup>1</sup> (<sup>1</sup>京大・医学研究科・腫瘍薬物治療学講座、<sup>2</sup>高知大・医・病理学講座)

## J2-1-4 Establishment of the endometriosis-associated ovarian cancer mouse model

Motoki Ono, Tsutomu Miyamoto, Ryoichi Asaka, Manaka Shinagawa, Yasuhiro Tanaka, Tanri Shiozawa (Shinshu Univ. Sch. of Med., Dept. Obstetrics &amp; Gynecol.)

子宮内膜症関連卵巣癌マウスモデルの確立

小野 元紀、宮本 強、浅香 亮一、品川 真奈花、田中 泰裕、塩沢 丹里 (信州大・医・産科婦人科学教室)

## J2-1-5 Establishment of a bladder cancer model using organoids derived from bladder epithelium in genetically engineered mice

Akihiro Hamada, Yuki Kita, Hideaki Takada, Kenji Nakamura, Toru Sakatani, Takeshi Sano, Takashi Kobayashi (Dept. Urology, Kyoto Univ. Grad. Sch. of Med.)

遺伝子改変マウスの膀胱上皮由来オルガノイドを用いた膀胱癌モデルの樹立

濱田 彬弘、北 悠希、高田 秀明、中村 健治、酒谷 徹、佐野 剛視、小林 恭 (京大・院医・泌尿器科)

## J2-1-6 Precision Modeling of Gall Bladder Cancer Patients in Mice by Orthotopic Implantation of Organoid-derived Tumor Buds

Shingo Kato<sup>1</sup>, Yoshitaka Hippo<sup>2</sup>, Atsushi Nakajima<sup>3</sup> (<sup>1</sup>Yokohama City Univ. Hosp. Dept. Clin. Cancer Genomics, <sup>2</sup>Chiba Cancer Ctr. Res. Inst. Dept. Mol. Carcinogenesis, <sup>3</sup>Yokohama City Univ. Grad. Sch. Med. Dept. Gastroenterology & Hepatology)

遺伝子改変オルガノイドを用いた「腫瘍芽」同所移植による胆嚢癌患者モデルの開発

加藤 真吾<sup>1</sup>、筆宝 義隆<sup>2</sup>、中島 淳<sup>3</sup> (<sup>1</sup>横浜市立大附属病院・がんゲノム診断科、<sup>2</sup>千葉県がんセ・発がん制御研究部、<sup>3</sup>横浜市立大・医・肝胆膵消化器病学)

J2-2

## Experimental animal models and genetically-engineered animals (2)

動物モデル・遺伝子改変動物 (2)

Chairperson: Hiroyuki Tomita (Dept. Tumor Path., Gifu Univ. Grad. Sch. of Med.)

座長: 富田 弘之 (岐阜大・院医・腫瘍病理)

## J2-2-1 Disseminated tumor cells in metastatic mouse models orthotopically transplanted with PDOs of colorectal cancer.

Takuya Okamoto<sup>1,2</sup>, Katsuyuki Yaginuma<sup>2</sup>, Satoshi Nagayama<sup>1,2</sup>, Kazutaka Obama<sup>1</sup>, Ryoji Yao<sup>1</sup> (<sup>1</sup>Dept. Gastrointestinal Surg. Kyoto Univ., <sup>2</sup>Dept. Cell Biol., Cancer Inst., JFCR)

患者由来大腸がんオルガノイド同所移植マウスモデルにおける転播播種細胞

岡本 拓也<sup>1,2</sup>、柳沼 克幸<sup>2</sup>、長山 聡<sup>1,2</sup>、小濱 和貴<sup>1</sup>、八尾 良司<sup>2</sup> (<sup>1</sup>京大・消化管外科、<sup>2</sup>(公財)がん研・研・細胞生物部)

## J2-2-2 Effects of a high fat diet on tumor growth and gene/protein expression in pancreatic cancer patient-derived xenografts

Mami Takahashi<sup>1</sup>, Rikako Ishigamori<sup>1</sup>, Masaya Ono<sup>2</sup>, Nobuyoshi Hiraoka<sup>2</sup>, Toshio Imai<sup>1</sup> (<sup>1</sup>Central Animal Div., Natl. Cancer Ctr. Res. Inst., <sup>2</sup>Dept. Proteomics, Natl. Cancer Ctr. Res. Inst., <sup>3</sup>Dept. Pathol., Natl. Cancer Ctr. Hosp.)

膵がん患者由来ゼノグラフトモデルにおける高脂肪食による腫瘍の増殖促進及び関連遺伝子・タンパク質発現の変化に関する検討

高橋 真美<sup>1</sup>、石ヶ守 里加子<sup>1</sup>、尾野 雅哉<sup>2</sup>、平岡 伸介<sup>3</sup>、今井 俊夫<sup>1</sup> (<sup>1</sup>国立がん研セ・研・動物実験施設、<sup>2</sup>国立がん研セ・研・プロテオーム解析、<sup>3</sup>国立がん研セ・中央病院・病理科)

## J2-2-3 Establishment of ICIs evaluation using humanized NOG-ΔMHC mice bearing lung adenocarcinoma-derived PDX

Asami Hanazawa, Chiyoko Nishime, Junichi Hata, Taichi Yamamoto (Central Inst. for Exp. Animals(CIEA))

肺腺癌由来 PDX を移植したヒト化 NOG-ΔMHC マウスを用いた免疫チェックポイント阻害薬評価系の確立

花澤 麻美、西銘 千代子、秦 順一、山本 大地 ((公財) 実験動物中央研)

J2-2-4 *Brcal*<sup>L63X/+</sup> rats exhibit radiation-associated increase in mammary carcinogenesis retaining *Brcal* heterozygosityTatsuhiko Imaoka<sup>1,2</sup>, Kazuhiro Daino<sup>1</sup>, Mayumi Nishimura<sup>1</sup>, Masami Arai<sup>3</sup>, Mitsue Saito<sup>4</sup>, Yoshiya Shimada<sup>1,2</sup>, Shizuko Kakinuma<sup>1,2</sup> (<sup>1</sup>Dept. Radiat Effects Res, QST Natl. Inst. Radiol Sci., <sup>2</sup>Dept. Radiol Sci, Tokyo Metropol Univ., <sup>3</sup>Dept. Clin. Genet, Juntendo Univ. Grad. Sch. Med., <sup>4</sup>Dept. Breast Oncol, Juntendo Univ. Grad. Sch. Med.)*Brcal*<sup>L63X/+</sup> ラットにおける *Brcal* 1 ヘテロ接合性を保った放射線関連乳腺発がんの増加今岡 達彦<sup>1,2</sup>、臺野 和広<sup>1</sup>、西村 まゆみ<sup>1</sup>、新井 正美<sup>3</sup>、齋藤 光江<sup>4</sup>、島田 義也<sup>1,2</sup>、柿沼 志津子<sup>1,2</sup> (<sup>1</sup>量研・放医研・放射線影響、<sup>2</sup>東京都立大・放射線、<sup>3</sup>順天堂大・院医・臨床遺伝、<sup>4</sup>順天堂大・院医・乳腺・内分泌外科)

## J2-2-5 Chick chorioallantoic membrane (CAM) tumor retains the genetic and histological features of the original tumor.

Tomoki Saito<sup>1</sup>, Ayaka Manabe<sup>1,2</sup>, Osamu Kikuchi<sup>1</sup>, Shinya Ohashi<sup>1,3</sup>, Manabu Muto<sup>1</sup> (<sup>1</sup>Dept. Therapeutic Oncology, Grad. Sch. of Med., Kyoto Univ., <sup>2</sup>KBBM Inc., <sup>3</sup>Preemptive Med. & Lifestyle Disease Res. Ctr., Kyoto Univ. Hosp.)

ニワトリの絨毛膜 (CAM) 腫瘍モデルは元の腫瘍の遺伝子および組織学的特徴を保持する

齋藤 伴樹<sup>1</sup>、真辺 綾佳<sup>1,2</sup>、菊池 理<sup>1</sup>、大橋 真也<sup>1,3</sup>、武藤 学<sup>1</sup> (京大・医学研究科・腫瘍薬物治療学講座、<sup>2</sup>(株) KBBM、<sup>3</sup>京都大病院 先制医療・生活習慣病研究セ)

## J2-2-6 HER2-antigen-specific humoral immune response in breast cancer lymphocytes transplanted in hu-PBL hIL-4 NOG mice

Yoshie Kametani<sup>1</sup>, Banri Tsuda<sup>2</sup>, Kiyoshi Ando<sup>3</sup>, Mamoru Ito<sup>2,4</sup>, Yutaka Tokuda<sup>2</sup> (<sup>1</sup>Dept. Mol. Life Sci., Tokai Univ. Sch. if Med., <sup>2</sup>Dept. Breast & Endocrine Surg., Tokai Univ. Sch. if Med., <sup>3</sup>Dept. Hematology, Tokai Univ. Sch. of Med., <sup>4</sup>Central Inst. for Exp. Animals)

乳がん患者末梢血単核球を移植したヒト化マウスにおける HER2 特異的液性免疫応答

亀谷 美恵<sup>1</sup>、津田 万里<sup>2</sup>、安藤 潔<sup>3</sup>、伊藤 守<sup>2,4</sup>、徳田 裕<sup>2</sup> (<sup>1</sup>東海大・医・医学科・分子生命科学、<sup>2</sup>東海大・医・乳腺内分泌外科、<sup>3</sup>東海大・医・医学科・血液腫瘍内科学、<sup>4</sup>実験動物中央研)

**J19 Radiation therapy**  
放射線治療

Chairperson: Tetsuo Akimoto (Natl. Cancer Ctr. Hosp. East)  
座長：秋元 哲夫 (国立がん研セ・東病院)

- J19-1 Efficacy of Boron Neutron Capture Therapy (BNCT) for Primary Central Nervous System Lymphoma (PCNSL)**  
Hideki Kashiwagi<sup>1</sup>, Shinji Kawabata<sup>1</sup>, Ryo Hiramatsu<sup>1</sup>, Yoko Matsushita<sup>2</sup>, Takahiro Fujishiro<sup>3</sup>, Koji Ono<sup>4</sup>, Masahiko Wanibuchi<sup>1</sup> (1)Dept. NeuroSurg., Osaka Med. & Pharm. Univ., (2)Dept. NeuroSurg., Tessaikai NeuroSurg. Hosp., (3)Dept. NeuroSurg., Tanabe neuroSurg. Hosp., (4)Kansai BNCT Med. Ctr., Osaka Med. & Pharm. Univ.)  
中枢神経原発悪性リンパ腫 (PCNSL) に対するホウ素中性子捕捉療法 (BNCT) の有効性について  
柏木 秀基<sup>1</sup>、川端 信司<sup>1</sup>、平松 亮<sup>1</sup>、松下 葉子<sup>2</sup>、藤城 高広<sup>3</sup>、小野 公二<sup>4</sup>、鰐淵 昌彦<sup>1</sup> (1)大阪医科薬科大・医・脳神経外科、(2)暁生会脳神経外科病院・脳神経外科、(3)田辺脳神経外科病院・脳神経外科、(4)大阪医科薬科大・関西 BNCT 共同医療セ)
- J19-2 Radiation therapy enhances systemic antitumor efficacy in PD-L1 therapy regardless of sequence in murine osteosarcoma**  
Shohei Katsuki<sup>1</sup>, Yutaka Takahashi<sup>1</sup>, Keisuke Tamari<sup>2</sup>, Kazumasa Minami<sup>2</sup>, Wataru Takenaka<sup>1</sup>, Junya Yamamoto<sup>1</sup>, Hideki Matsutani<sup>1</sup>, Shotaro Tatekawa<sup>3</sup>, Kazuhiko Ogawa<sup>2</sup>, Masahiko Koizumi<sup>1</sup> (1)Div. Health Sci., Osaka Univ. Grad. Sch. of Med., (2)Dept. Radiation Oncology, Osaka Univ. Grad. Sch. of Med.)  
マウス骨肉腫モデルに対する抗 PD-L1 抗体治療において治療順番に関わらず放射線治療は全身性の抗腫瘍効果を引き起こす  
勝木 翔平<sup>1</sup>、高橋 豊<sup>1</sup>、玉利 慶介<sup>2</sup>、皆已 和賢<sup>2</sup>、武中 渉<sup>1</sup>、山本 純也<sup>1</sup>、松谷 英樹<sup>1</sup>、立川 章太郎<sup>2</sup>、小川 和彦<sup>2</sup>、小泉 雅彦<sup>1</sup> (1)大阪大・院医・保健学専攻、(2)大阪大・院医・放射線治療学)
- J19-3 Investigation of short-lived alpha-emitting nuclear medicine aiming at universal cancer treatment**  
Kazuko Kaneda<sup>1,2,3</sup>, Yoshiyuki Manabe<sup>1,2,3</sup>, Atsushi Shimoyama<sup>1,2,3</sup>, Kazuya Kabayama<sup>1,2,3</sup>, Yoshikatsu Kanai<sup>1,4</sup>, Atsushi Toyoshima<sup>1,2</sup>, Koichi Fukase<sup>1,2,3</sup>, Atsushi Shinohara<sup>1,5</sup> (1)Inst. Rad. Sci., Osaka Univ., (2)PRC, Grad. Sch. of Sci., Osaka Univ., (3)Dept. Chem., Grad. Sch. of Sci., Osaka Univ., (4)Dept. Bio-system Pharm., Grad. Sch. of Med., Osaka Univ., (5)Fac. of Health Sci., Osaka Aoyama Univ.)  
万能治療を目指した短寿命アルファ線核医学治療薬の開発  
兼田 加珠子<sup>1,2,3</sup>、真鍋 良幸<sup>1,2,3</sup>、下山 敦史<sup>1,2,3</sup>、榎山 一哉<sup>1,2,3</sup>、金井 好克<sup>1,4</sup>、豊嶋 厚史<sup>1,2</sup>、深瀬 浩一<sup>1,2,3</sup>、篠原 厚<sup>1,5</sup> (1)大阪大・放射線科学系 盤機構、(2)大阪大・院・理学研究科・PRC、(3)大阪大・院・理学研究科・化学専攻、(4)大阪大・院医、(5)大阪青山大・健康科学部)
- J19-4 A mechanism of PDAC radioresistance: Crosstalk between radiation-induced autophagy and G2 checkpoint activation**  
Sumitaka Hasegawa<sup>1</sup>, Mayuka Anko<sup>1,2</sup> (1)Radiation & Cancer Biol. Group, QST, (2)Dept. Obstetrics & Gynecol., Keio Univ. Sch. Med.)  
オートファジーと G2 チェックポイントのクロストークが膵がん放射線治療抵抗性に寄与している  
長谷川 純崇<sup>1</sup>、安康 真由香<sup>1,2</sup> (1)量研・放射線がん生物学研究グループ、(2)慶應大・医・産婦人科学教室)
- J19-5 ABLATIVE FRACTIONAL LASER EXPOSURE AS AN ADJUVANT FOR IMMUNE CHECKPOINT THERAPY OF COLON CANCER IN A MICE MODEL**  
Kawakubo Masayoshi<sup>1,2</sup>, Dieter Manstein<sup>1,2</sup> (1)Cutaneous Biol. Res. Ctr., Massachusetts General Hosp. Res. Inst., (2)Harvard Med. Sch.)
- J19-6 Crosstalk of microsomal glutathione transferase 1 and CD44 in T3M4 human pancreatic cancer cells on hyperthermic model**  
Miyuki Shimoji<sup>1</sup>, Satoshi Murata<sup>1,2</sup>, Andreas M. Sihombing<sup>1</sup>, Sakura Nakao<sup>1</sup>, Katsushi Takebayashi<sup>1</sup>, Hirokazu Kodama<sup>1</sup>, Masatsugu Kojima<sup>1</sup>, Tomoyuki Ueki<sup>1</sup>, Naomi Kitamura<sup>3</sup>, Mina Kitamura<sup>1</sup>, Aya Tokuda<sup>1</sup>, Toru Miyake<sup>1</sup>, Eiji Mekata<sup>3</sup>, Masaji Tani<sup>1</sup> (1)Dept. Surg., Shiga Univ. of Med. Sci., (2)Cancer Ctr., Shiga Univ. of Med. Sci. Hosp., (3)Dept. Comprehensive Surg., Shiga Univ. of Med. Sci.)  
ヒト T3M4 癌細胞株を用いた温熱療法モデルにおける CD44 と MGST1 の関係  
下地 みゆき<sup>1</sup>、村田 聡<sup>1,2</sup>、Sihombing Andreas M<sup>1</sup>、中尾 さくら<sup>1</sup>、竹林 克士<sup>1</sup>、児玉 泰一<sup>1</sup>、小島 正継<sup>1</sup>、植木 智之<sup>1</sup>、北村 直美<sup>3</sup>、北村 美奈<sup>1</sup>、徳田 彩<sup>1</sup>、三宅 亨<sup>1</sup>、目片 英治<sup>3</sup>、谷 眞至<sup>1</sup> (1)滋賀医大・外科学講座、(2)滋賀医大・院附属病院・腫瘍セ、(3)滋賀医大・総合外科学講座)

**J9 Epigenetics**  
エピジェネティクス

Chairperson: Yutaka Kondo (Div. Cancer Biol., Nagoya Univ., Grad. Sch. of Med.)  
座長：近藤 豊 (名古屋大・院医・腫瘍生物学)

- J9-1 Epigenome analysis of histone methyltransferase PRMT6 in endometrial cancer using ChIP-seq, ATAC-seq and RNA-seq**  
Futaba Inoue<sup>1,2</sup>, Kenbun Sone<sup>1</sup>, Kohei Kumegawa<sup>2</sup>, Saki Tanimoto<sup>1</sup>, Yusuke Toyohara<sup>1</sup>, Asako Kukita<sup>1</sup>, Ayumi Taguchi<sup>1</sup>, Michihiro Tanikawa<sup>1</sup>, Katsutoshi Oda<sup>1</sup>, Reo Maruyama<sup>2</sup>, Yutaka Osuga<sup>1</sup> (1)Dept. Obstetrics & Gynecol., The Univ. of Tokyo, (2)Project for Cancer Epigenomics, The Cancer Inst. Of JFCR, (3)Dept. Integrative Genomics, The Univ. of Tokyo)  
ヒストンメチル化酵素 PRMT6 の子宮体癌における ChIP-seq, ATAC-seq, RNA-seq を用いたエピゲノム解析について  
井上 双葉<sup>1,2</sup>、曾根 献文<sup>1</sup>、桑川 昂平<sup>2</sup>、谷本 早紀<sup>1</sup>、豊原 佑典<sup>1</sup>、久木 田 麻子<sup>1</sup>、田口 歩<sup>1</sup>、谷川 道洋<sup>1</sup>、織田 克利<sup>3</sup>、丸山 玲緒<sup>2</sup>、大須賀 穰<sup>1</sup> (1)東京大・産婦人科、(2)公財)がん研・がんエピゲノム、(3)東京大・院医・統合ゲノム学)
- J9-2 Leveraging the ChIP-seq dataset to develop a clinically useful machine learning platform**  
Norio Shinkai<sup>1,2,3</sup>, Syuzo Kaneko<sup>1,2</sup>, Ken Asada<sup>1,2</sup>, Ken Takasawa<sup>1,2</sup>, Ryuji Hamamoto<sup>1,2,3</sup> (1)Div. Med. AI Res., Natl. Cancer Ctr. Res. Inst., (2)Cancer Transl. Res. Team, RIKEN Ctr. for AIP project, (3)NCC Cancer Sci., Med. Dent., Tokyo Med. & Dent. Univ.)  
臨床応用を志向した、ChIP-seq データセットによる機械学習分析プラットフォーム開発  
新海 典夫<sup>1,2,3</sup>、金子 修三<sup>1,2</sup>、浅田 健<sup>1,2</sup>、高澤 建<sup>1,2</sup>、浜本 隆二<sup>1,2,3</sup> (1)国立がん研セ・研・医療 AI 研究開発分野、(2)理研・革新知能統合研究セ・がん探索医療、(3)東京医歯大・医歯学・NCC 腫瘍医科学)
- J9-3 Druggable dependency on histone demethylase LSD1 in undifferentiated melanoma**  
Shinichiro Kato, Kunihiko Hinohara (Nagoya Uni., Grad. Sch. of Med., Dept. Immunol., C5CD)  
低分化型悪性黒色腫におけるヒストン脱メチル化酵素 LSD1 依存性の解明  
加藤 真一郎、日野原 邦彦 (名古屋大・院医・免疫学・C5CD)
- J9-4 TKI Combination with DNMT1 inhibitor Depletes Leukemic Stem Cell in CML**  
Hiroschi Ureshino<sup>1</sup>, Tatsuro Watanabe<sup>2</sup>, Shinya Kimura<sup>1,2</sup> (1)Saga Univ. Div. Hematology & Oncology, (2)Saga University Drug Discovery & BioMed. Sci.)  
CML 幹細胞を標的とした DNMT 阻害剤と TKI の併用療法  
嬉野 博志<sup>1</sup>、渡邊 達郎<sup>2</sup>、木村 晋也<sup>1,2</sup> (1)佐賀大・医・血液腫瘍内科、(2)佐賀大・医・創薬科学講座)
- J9-5 Carcinogenic risk estimation by DNA methylation quantification in patients with nonalcoholic steatohepatitis**  
Junko Kuramoto<sup>1</sup>, Eri Arai<sup>1</sup>, Ying Tian<sup>1</sup>, Satomi Makiuchi<sup>1</sup>, Noboru Tsuda<sup>1</sup>, Hidenori Ojima<sup>1</sup>, Yuriko Yamada<sup>2</sup>, Takuya Yorani<sup>2</sup>, Yoriko Takahashi<sup>3</sup>, Moto Fukai<sup>4</sup>, Kazuki Yasuda<sup>5</sup>, Akinobu Taketomi<sup>4</sup>, Tatsuya Kanto<sup>6</sup>, Yae Kanai<sup>1</sup> (1)Dept. Path., Keio Univ. Sch. of Med., (2)Tsukuba Res. Inst., Sekisui Med. Co., Ltd., (3)BioMed. Dept., Solution Ctr., Mitsui Knowledge Industry Co., Ltd., (4)Dept. Gastroenterological Surg., Hokkaido Univ. Grad. Sch. of Med., (5)Dept. Diabetes, Endocrinol., Metab., Kyorin Univ. Sch. Med., (6)Res. Ctr. Hepatitis Immunol., Natl. Ctr. Global Health Med.)  
DNA メチル化状態を指標とする非アルコール性脂肪性肝炎からの肝発がんリスク予測  
蔵本 純子<sup>1</sup>、新井 恵史<sup>1</sup>、田 迎<sup>1</sup>、牧内 里美<sup>1</sup>、津田 昇<sup>1</sup>、尾島 英知<sup>1</sup>、山田 有理子<sup>2</sup>、興谷 卓也<sup>2</sup>、高橋 順子<sup>3</sup>、深井 原<sup>4</sup>、安田 和基<sup>5</sup>、武富 紹信<sup>6</sup>、考藤 達哉<sup>6</sup>、金井 弥栄<sup>1</sup> (1)慶應大・医・病理学教室、(2)積水メディカル (株)・つくば研、(3)三井情報 (株)バイオメディカル室、(4)北海道大・院医・外科学講座、(5)杏林大・糖尿病・内分泌・代謝内科学教室、(6)国立国際医療研セ・肝炎免疫研セ)
- J9-6 Role of Histone Chaperone SET in Cancer-Associated Myofibroblasts**  
Takashi Ohama (Joint Faculty of Veterinary Med., Yamaguchi Univ.)  
ヒストンシャペロン SET のがん関連筋線維芽細胞における役割  
大浜 剛 (山口大・共同獣医)

Room 14 Sep. 30 (Thu.) 13:00-15:30

E

S6

**Cancer metabolism: beyond the Warburg**

がん代謝：ワールブルグを超えて

Chairpersons: Atsushi Hirao (Cancer Res. Inst., WPI-LSI, Kanazawa Univ.)  
Tomoyoshi Soga (Inst. for Advanced BioSci., Keio Univ.)座長：平尾 敦（金沢大・がん進展制御研）  
曾我 朋義（慶應大・先端生命科学研）

Cancer cells adapt metabolism to allow energy production and the redistribution of carbons to nucleotide, protein, and fatty acid syntheses, supporting malignant phenotypes. In addition, recent studies have revealed that some metabolites, such as oncometabolite 2HG, play critical roles as signaling molecules controlling a wide range of cellular processes. Lactate, an end product of glucose metabolism, is utilized in histone lysine lactylation, to regulate gene expression, indicating that metabolites directly control cell fate. Metabolites also act on the immune system and the microbiome, which affect communication among tissues. Thus, metabolism or metabolites play pleiotropic roles in development and malignant progression of cancers. In this symposium, we focus on recent progress of cancer metabolism.

**S6-1 Novel metabolic enzymes regulating colorectal cancer growth and metastasis**

Kenji Ohshima, Eiichi Morii (Dept. Pahol., Osaka Univ., Sch. Med.)

大腸がんの増殖と転移を司る新たな代謝酵素群  
大島 健司、森井 英一（大阪大・医・病態病理）**S6-2 Polarity proteins regulate amino acid uptake in ER+ breast cancer**

Yasuhiro Saito (Inst. Adv. Biosci., Keio Univ.)

乳がん細胞におけるアミノ酸取り込みは細胞極性タンパク質により制御される  
齊藤 康弘（慶應大・先端生命化学研）**S6-3 Imaging metabolomics to decipher cancer metabolism**

Makoto Suematsu (Dept. Biochem. Keio Univ. Sch. Med.)

イメージングメタボロミクスによるがん代謝システムの解明  
末松 誠（慶應大・医・医化学）**S6-4 Cell fate determination mediated by nutrient-derived metabolites in tumor development and malignant progression**

Atsushi Hirao (Cancer Res. Inst., WPI-LSI, Kanazawa Univ.)

発がんおよび悪性化機構における栄養素由来代謝物を介した細胞運命決定  
平尾 敦（金沢大・がん進展制御研）**S6-5 Dual-omics reveals how cancer cachexia transforms the landscape of liver metabolism**Masahiro Aoki<sup>1</sup>, Emi Mishiro<sup>1</sup>, Tomoyoshi Soga<sup>2</sup>, Yasushi Kojima<sup>1</sup> (<sup>1</sup>Div. Pathophysiol., Aichi Cancer Ctr. Res. Inst., <sup>2</sup>Inst. Adv. Biosci., Keio Univ.)

デュアルオミクス解析で明らかとなったがん悪液質に伴う肝臓の代謝変化の概要

青木 正博<sup>1</sup>、三城 恵美<sup>1</sup>、曾我 朋義<sup>2</sup>、小島 康<sup>1</sup>（<sup>1</sup>愛知県がんセンター・研・がん病態生理、<sup>2</sup>慶應大・先端生命科学研）**S6-6 Metabolic interactions of cancer cells and fibroblasts in tumor microenvironments**Tsuyoshi Osawa<sup>1</sup>, Ryuichi Nakahara<sup>1</sup>, Tepei Shimamura<sup>2</sup>, Tomoyoshi Soga<sup>3</sup> (<sup>1</sup>Nutrimics Onc, RCAST, Univ. of Tokyo, <sup>2</sup>Systems Biol., Med., Nagoya Univ., <sup>3</sup>Keio Univ.)

がん微小環境におけるがん細胞と線維芽細胞の代謝相互作用

大澤 毅<sup>1</sup>、中原 龍一<sup>1</sup>、島村 徹平<sup>2</sup>、曾我 朋義<sup>3</sup>（<sup>1</sup>東京大・先端研・ニュートリオミクス・腫瘍学、<sup>2</sup>名古屋大・医学系研究科、<sup>3</sup>慶應大・先端生命科学研）

Room 15 Sep. 30 (Thu.) 13:00-15:30

E

S7

**Futuristic methods for precision cancer medicine**

がんゲノム医療の明日を切り開く新技術

Chairpersons: Hiroshi Nishihara (Genomics Unit, Keio Cancer Ctr., Keio Univ. Sch. of Med.)  
Issei Imoto (Aichi Cancer Ctr. Res. Inst.)座長：西原 広史（慶應大・腫瘍セ・ゲノム医療ユニット）  
井本 逸勢（愛知県がんセンター・研）

Development of genomic medicine enables us to perform contemporary clinical sequencing, and the genotype-matched treatment for cancer patients based on cancer genomic profiling (CGP) test is expected to be an ultimate personalized medicine. In 2019, the Japanese health insurance system agreed to cover the cost of two CGP tests, accelerating the ability of doctors to tailor treatments to the specific genomic profile of a patient's cancer. However, these tests include only a limited number of genes and doctors are constrained by prohibitions on off-label drug use and restrictions on gene testing before patients have failed standard chemotherapy. Consequently, only 1-2% of cancer patients in Japan ever undergo genetic testing. The advanced genomics including whole exome/genome sequence and liquid biopsy are almost in the final step of clinical implementation. In addition, alternative innovative technologies such as robotics and artificial intelligence are now expected to shed light into the stagnant cancer genomics. In this symposium, we will invite several experts of advance cancer genomics and would like to discuss the futuristic methods for precision cancer medicine.

**S7-1 Integration of medicine and data science for the future of cancer precision medicine**

Rui Yamaguchi, Hiromichi Ebi, Issei Imoto (Aichi Cancer Ctr. Res. Inst.)

未来のがん精密治療の実現へ向けた医学とデータ科学の統合的アプローチ  
山口 類、衣斐 寛倫、井本 逸勢（愛知県がんセンター・研）**S7-2 Current situation about hereditary cancer genes revealed by Japanese large-scale genome data**

Yukihide Momozawa (Lab. for Genotyping Development, RIKEN Ctr. for Integrative Med. Sci.)

大規模日本人ゲノムデータから明らかになる遺伝性腫瘍のリスク遺伝子の実態と課題  
桃沢 幸秀（理研・IMS・基盤技術開発研究チーム）**S7-3 Clinical implementation of whole-exome sequencing for cancer in clinical practice**

Hideyuki Hayashi (Genomics Unit, Keio Cancer Ctr., Keio Univ. Sch. of Med.)

がん患者に対する全エクソンシーケンスの臨床実装  
林 秀幸（慶應大・腫瘍セ・ゲノム医療ユニット）**S7-4 Technical progress in liquid biopsy (LBx) for precision oncology**

Kazuko Sakai, Kazuto Nishio (Dept. Genome Biol. Kindai Univ. Faculty of Med.)

リキッドバイオプシーの技術的進歩  
坂井 和子、西尾 和人（近畿大・医・ゲノム生物学教室）**S7-5 Robotic Biology: Robotics and AI Accelerate Life Science**

Tohru Natsume (Cell. &amp; Mol. BioTech. Res. Inst., AIST)

ロボット・ラボオートメーションと人工知能が拓くライフサイエンスの未来  
夏目 徹（産総研・細胞分子工学研究部門）



Room 16 Sep. 30 (Thu.) 13:00-15:30

E

S8

**Understanding and targeting genetically-complex human malignancies**

治療抵抗性と不均一性の克服

Chairpersons: Masaki Mori (Kyushu Univ.)

Fumihiko Ishikawa (RIKEN Ctr. for Integrative Med. Sci.)

座長: 森 正樹 (九州大)

石川 文彦 (理研・生命医科学研究セ)

Despite great achievements and discoveries in cancer research, we still face intractable cases in which treatment-resistant malignant clones lead to refractory disease.

In this session entitled "Understanding and targeting genetically-complex human malignancies, we have asked top runners in the field, in basic and clinical sciences, to speak about their efforts understanding critical features of difficult-to-treat cancers and creating effective treatments for poor prognosis malignant diseases.

We hope that the audience will appreciate topics covering new sequencing technologies, malignant stem cell biology, and integrative analytical approaches aiming to unravel how cancer cells arise, evolves and acquire therapy-resistance. Some characteristics are organ-specific and tumor-specific, while others are shared across diverse tumor types and all focus on improving clinical outcomes.

We look forward to participation of the meeting attendees.

**S8-1 Tumor stem cells inducing cellular heterogeneity are critical for treatment resistance**

Norikatsu Miyoshi<sup>1,2</sup>, Shiki Fujino<sup>1,2</sup>, Takayuki Ogino<sup>1</sup>, Hidekazu Takahashi<sup>1</sup>, Mamoru Uemura<sup>1</sup>, Hirofumi Yamamoto<sup>1</sup>, Tsunekazu Mizushima<sup>1</sup>, Yuichiro Doki<sup>1</sup>, Hidetoshi Eguchi<sup>1</sup> (<sup>1</sup>Dept. Gastroenterological Surg., Osaka Univ., Sch. Med., <sup>2</sup>Osaka Intl Cancer Inst.)

癌幹細胞の生み出す腫瘍不均一性と臨床的治療抵抗性の獲得  
三吉 範克<sup>1,2</sup>、藤野 志季<sup>1,2</sup>、荻野 崇之<sup>1</sup>、高橋 秀和<sup>1</sup>、植村 守<sup>1</sup>、山本 浩文<sup>1</sup>、水島 恒和<sup>1</sup>、土岐 祐一郎<sup>1</sup>、江口 英利<sup>1</sup> (<sup>1</sup>大阪大・消化器外科、<sup>2</sup>大阪国際がんセ・がん医療創生部)

**S8-2 The evolving genomic landscape of esophageal squamous cell carcinoma under chemoradiotherapy**

Atsushi Niida<sup>1</sup>, Hidenari Hirata<sup>2</sup>, Koshi Mimori<sup>3</sup> (<sup>1</sup>Inst. of Med. Sci., The Univ. of Tokyo, <sup>2</sup>Div. Radiation Oncology & Particle Therapy, NCC Hosp. East, <sup>3</sup>Dept. Surg., Kyushu Univ. Beppu Hosp.)

ゲノム解析による化学放射線治療時の食道扁平上皮癌の進化機構の解明

新井田 厚司<sup>1</sup>、平田 秀成<sup>2</sup>、三森 功士<sup>3</sup> (<sup>1</sup>東京大・医科研、<sup>2</sup>国立がん研セ・東病院・粒子線医学開発分野、<sup>3</sup>九州大・別府病院)

**S8-3 ELEANOR-chromatin interaction facilitates *ESR1* transcription**

Yuichi Ichikawa, Noriko Saitoh (Div. Cancer Biol. The Cancer Inst. JFCR)

非コードRNA エレノアとクロマチンの相互作用を介した *ESR1* 遺伝子の転写活性化

市川 雄一、齊藤 典子 ((公財) がん研・研・がん生物部)

**S8-4 Bridging single cell genomics with clinical care in cancer patients**

Katsuya Tsuchihara (Div. Translational Informatics, EPOC, Natl. Cancer Ctr.)

シングルセルゲノミクスとがん治療の橋渡し

土原 一哉 (国立がん研セ・EPOC・TI 分野)

**S8-5 Biomarker-driven precision medicine for hepatocellular carcinoma**

Takahiro Kodama, Yuta Myojin, Hayato Hikita, Ryotaro Sakamori, Tomohide Tatsumi, Tetsuo Takehara (Dept. Gastroenterol&Hepatol., Osaka. Univ. Grad. Sch. Med.)

治療効果予測バイオマーカーに基づいた肝細胞癌個別化治療戦略

小玉 尚宏、明神 悠太、疋田 隼人、阪森 亮太郎、巽 智秀、竹原 徹郎 (大阪大・院医・消化器内科学)

**S8-6 Finding vulnerabilities in genetically-complex hematologic tumors**

Fumihiko Ishikawa (RIKEN Ctr. for Integrative Med. Sci.)

予後不良白血病における個別化医療の提案

石川 文彦 (理研・生命医科学研究セ)

Room 17 Sep. 30 (Thu.) 13:00-15:30

E

YSA

**Cancer Science Young Scientists Award Lectures**

ヤングサイエンティストアワード受賞講演

Chairperson: Masanori Hatakeyama (Dept. Microbiol., Grad. Sch. Med., Univ. Tokyo)

座長: 畠山 昌則 (東京大・院医・微生物学)

**YSA-1 Intestinal phenotype is maintained by *Atoh1* in the cancer region of intraductal papillary mucinous neoplasm**

Nobuhiro Katsukura<sup>1</sup>, Kiichiro Tsuchiya<sup>2</sup> (<sup>1</sup>Dept. of Gastroenterology, Teikyo Univ. Mizonokuchi Hosp., <sup>2</sup>Dept. of Gastroenterology, Faculty of Med., Univ. of Tsukuba)

膵管内乳頭粘液性腫瘍の癌部における腸形質は *Atoh1* によって維持されている

勝倉 暢洋<sup>1</sup>、土屋 輝一郎<sup>2</sup> (<sup>1</sup>帝京大・溝口病院・消化器内科、<sup>2</sup>筑波大・医・消化器内科)

**YSA-2 MCM10 compensates for Myc-induced DNA replication stress in breast cancer stem-like cells**

Takahiko Murayama<sup>1</sup>, Yasuto Takeuchi<sup>2</sup>, Noriko Gotoh<sup>2</sup> (<sup>1</sup>Fox Chase Cancer Ctr., <sup>2</sup>Cancer Res. Inst., Kanazawa Univ.)

MCM10 は乳がん幹細胞における Myc 由来の DNA 複製ストレスに対処する

村山 貴彦<sup>1</sup>、竹内 康人<sup>2</sup>、後藤 典子<sup>2</sup> (<sup>1</sup>フォックスチェイス癌センター、<sup>2</sup>金沢大・がん進展制御研)

**YSA-3 Exosomes mediate intercellular transfer of non-autonomous tolerance to proteasome inhibitors in mixed-lineage leukemia**

Maolin Ge (Shanghai Inst. of Hematol., Ruijin Hosp. affiliated to Shanghai Jiao Tong Univ. Sch. of Med.)

**YSA-4 High glucose-ROS conditions enhance the progression in cholangiocarcinoma via upregulation of *MAN2A2* and *CHD8***

Unchalee Thonsri<sup>1,2</sup>, Sopot Wongkham<sup>1,2</sup>, Mitsuyoshi Nakao<sup>3</sup>, Sittiruk Roytrakul<sup>4</sup>, Chaisiri Wongkham<sup>1,2</sup>, Shinjiro Hino<sup>3</sup>, Tomoaki Koga<sup>3</sup>, Wunchana Seubwai<sup>2,5</sup> (<sup>1</sup>Faculty of Med., Dept. of Biochem., Khon Kaen Univ., <sup>2</sup>Cholangiocarcinoma Res. Inst., Khon Kaen Univ., <sup>3</sup>Dept. of Med. Cell Biol., Inst. of Mol. Embryology & Genetics, Kumamoto Univ., <sup>4</sup>Natl. Ctr. for Genetic Engineering & Biotech., Pathum Thani, <sup>5</sup>Faculty of Med., Dept. of Forensic Med., Khon Kaen Univ.)