Day 3
October 3 (Saturday)
Clinical trial translation to the daily clinic

In the past decade, the framework of research and development of cancer therapies has been drastically changing. Molecular biology-based, tumor agnostic concept is overwriting existing anatomical and histological subclassification of solid tumors. The integrated patient registry system is necessary to propel clinical trials. And a rush of newly developed drugs and biomarker testing demands clinicians to choose highly complicated decision ladders. In the meantime, biologists are challenged to clarify the underlying molecular mechanisms of newly developed drug-host interactions. We like to discuss the achievement and perspective and seek a new way to cultivate the wilderness of precision oncology.

CS3-1 Precision Oncology 2020: Results and Lessons from the NCI-MATCH Clinical Trial
Stanley R. Hamilton (Dept. Path., COHNMJ)

CS3-2 Activity on Nationwide Cancer Genome Screening Projects SCRF-Japan GI-/MONSTAR-SCREEN

CS3-3 Cohorts and biobanks as essential resources for accelerating precision medicine in cancer

CS3-4 Importance of pathology for precision oncology

CS3-5 TBD
Thomas Brown (Syapse, Inc.)

Cancer Immunotherapy based on diversity of tumor-immune interaction

Cancer immunotherapy is one of the major treatment options for cancer after development of immune checkpoint inhibitors targeting CTLA4, PD-1 and PD-L1 molecules. However, only a subset of patients has clinical benefit of immune checkpoint inhibitors. Since T cells as well as other immune cells play major roles in the anti-tumor immune responses, several approaches have been investigated to develop novel immunotherapy by increasing the numbers of T cells and enhancing their anti-tumor functions in the tumor site. In this symposium, we will discuss a variety of potential strategies of immunotherapy, including an artificial adjuvant vettor to enhance NKT cells and cancer-specific T cells, cancer peptide vaccine therapy targeting cancer-specific T cells, and more efficient gene engineered anti-tumor T cells such as chimeric antigen-receptor (CAR)-T cells and T cell receptor (TCR)-T cells targeting neoantigens. The findings from these researches will lead to development of more effective immunotherapy for cancer.

S15-1 Anti-cancer therapeutic cellular drug, artificial adjuvant vector cells by targeting in vivo dendritic cells
Shin-ichiro Fujii (Lab. Immunotherapy, RIKEN, IMS)

S15-2 Phase II adjuvant peptide vaccine for postoperative esophageal cancer patients with pathologically positive nodes

S15-3 Cancer-reactive/neonantigen-specific T cells in peripheral blood, tumor and lymph node tissues of cancer patients
Kazuma Kiyotani, Yusuke Nakamura (Cancer Precision Med. Ctr., JFCR)

S15-4 Combined targeting of tumor-stroma and cancer cells by T cells is essential for eradication of solid tumors
Stephen P. Wolfe, Vasiliki Anastasopoulos, Madeline Steiner, Markus F. Dietl, Kimberley Borutta, Boris Engels, Pol Yin Wey, Kazuma Kiyotani, Yusuke Nakamura, Karin Schreiber, Hans Schreiber, Matthias Leisegang (Dept. of Pathology, University of Chicago, Chicago, USA, David and Etta Jones Center Cellular Therapy, University of Chicago, Department of Medicine, University of Chicago, Chicago, USA, Institute of Immunology, Charite, Campus Buch, Berlin, Germany, Cancer Precision Medicine Center, Japanese Foundation for Cancer Research, Japan)

S15-5 Next generation CAR-T cell therapy for solid tumors
Koji Tamada (Yamaguchi Univ., Sch. Med.)

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In the 21st century, molecularly targeted therapies for cancer have made great strides. More than 40 drugs have been approved for various cancer types, and dramatic improvement in prognosis has been achieved for patients by targeting oncogene drug targets. On the other hand, many issues have remained. For instance, there are many cases of relapse due to resistance or tolerance to molecularly targeted drugs. In addition, there are still many cancer types for which no targeted drugs are available. In recent years, development of drugs for new targets and for resistant tumors has progressed based on some new ideas. In this session, 6 experts will give cutting-edge lectures on antibody-drug conjugates, micellized targeted drugs, nucleic acid drugs, drugs for resistant/tolerant tumors, drugs for central nervous system metastasis, and molecularly targeted drugs for KRAS mutant tumors. We look forward to many people participating and providing fruitful discussions.

**S16-1 Development of novel antibody-drug conjugates**
Shunjii Takahashi (Dept. Med. Oncology, Cancer Institute Hosp., JFCR)

**Antibody-Drug Conjugate の新展開**
高橋 俊二（公益） がん研・有明病院・総合腫瘍科

**S16-2 Latest Advancement of Targeted Drug Therapy using Polymer Micelle**
Sahina Quader1, Kazunori Kataoka1, Horacio Cabral1, Hiroaki Kinoh1, Xueying Liu1, Hiroshi Shibasaki2, West Paisio3 (Innovation Ctr. of NanoMed. (iCONM), Kawasaki Inst. of Industrial Promotion, “Inst. for Future Initiatives, The Univ. of Tokyo, “Dept. Bioengineering, The Univ. of Tokyo, “Dept. Otologyngology, The Univ. of Tokyo)

**S16-3 The potential for microRNA therapeutics: Pre-clinical study of locally administered miRNA for malignant mesothelioma**

**悪性胸膜中皮腫を対象とした局所投与型マイクログRNA 核酸医療の非 臨床試験**
田原 俊道（広島大・院・細胞分子生物）

**S16-4 Novel mechanisms of tolerance and resistance to targeted drugs**

**S16-5 Mechanisms of Targeted Drug Resistance in Central Nervous System (CNS)**
Akhirot Nishiyama1, Sachiko Arai1, Koji Fukuda1, Shigeki Sato1, Naohiro Yangamura1, Chuki Suzuki1, Aozasa Tanimoto1, Kaname Yamashita1, Shinnji Takeuchi1, Kouhiro Ohzou1, Seiji Yano1 (Div. Med. Oncology Cancer Inst., Kanazawa Univ.)

**中枢神経系転移における耐性機構**
西山 明宏、新井 祥子、福田 康二、佐藤 成樹、柳村 尚寛、鈴木 干晶、谷本 桂、山下 要、竹内 伸司、大坪 公士郎、矢野 聖二（金沢 大・がん研・腫瘍内科）

**S16-6 Selective Targeting to KRAS-driven Lung Tumorigenesis via Unresolved ER stress**

**KRAS変異肺がんにおける小胞体ストレス誘導を介した新規治療開発**
下村 巖1, 立川 宏, 多田 裕1, 立 一郎, 落谷 孝広, 山本 勇介（国立がん研、研・細胞情報学、千葉大・院医・呼吸器内科、国際医療福祉大・医・呼吸器内科, 東京大・医研・分子細胞治療)
International Sessions

Room 5  Oct. 3 (Sat.) 9:00-11:30
IS9  New therapeutic strategy for controlling metastasis and relapse in cancer
Chairpersons: Kohei Miyazono (Dept. Mol. Path., Grad. Sch. of Med., The Univ. of Tokyo)

座長：宮脇 洋平 (東京大学・院医・分子病理学)

During the course of cancer, relapse occurs through survival of a few original cancer cells after initial treatment. Dissemination and metastasis of cancer can be seen even in the early stages of cancer, but after relapse of cancer, cancer cells often acquire resistance to conventional treatment and exhibit high metastatic abilities. Metastasis and relapse of cancer are thus closely related to the poor prognosis of various cancers. Recently, various approaches have been undertaken to combat relapse and metastasis of cancer. Epithelial-mesenchymal transition (EMT) in cancer cells and stromal fibroblasts has been shown to induce invasion, metastasis, and resistance to chemotherapy, and thus regulation of EMT phenotype may be a potentially interesting therapeutic strategy for advanced-stage cancer. Functions of cancer cells are influenced by the extracellular matrix (ECM) and tumor microenvironment, and regulation of angiogenesis has been shown to control cancer progression. In addition, inflammation and evasion of immune surveillance induce the progression of cancer metastasis. This International Session will discuss the complex roles of cancer cells and tumor microenvironment in progression of metastasis and relapse of cancer. Novel strategies for treatment of metastasis will also be discussed.

IS9-1  RNF208, a novel estrogen-inducible E3 ligase, targets soluble Vimentin to suppress metastasis
Seong Jin Kim (Dept. Mol. Path., Grad. Sch. of Med., The Univ. of Tokyo)

IS9-2  Novel approach for treatment of oral squamous cell carcinoma

口腔腔部上皮がんに対する新たな治療を目指して
井上 カタレアナ，秋月 たかさと，谷 versa

IS9-3  VEGF-A and anti-PD-1 blocking therapy
Eui-Cheol Shin（Grad. Sch. of Med. Sc. & Engineering, KAIST）

IS9-4  BMP signaling as a potential therapeutic strategy for DIPG
Qiaoan Xi（Sch. of Life Sci., Tsinghua Univ.）

IS9-5  Mechanisms of neutrophil-dependent metastasis of inflammatory renal cell carcinoma

炎症性腎細胞がんの好中球依存性転移の分子機構
宮脇 洋平，松崎 結人，西田 章，市橋 喜生（東京大学・医・分子病理）

IS9-6  The lysophospholipid metabolism enzyme Gdpr5 maintains chronic myelogenous leukemia stem cells

リソリン脂質代謝酵素Gdpr5によるCML幹細胞の維持機構
中尾一也，秋山 喜昭

IS9-7  Brg1, a subunit of the SWI/SNF complex, is critical for growth and metastasis of pancreatic cancer cells in mice.
Osamu Araki, Akihisa Fukuda, Motoyuki Tsuda, Mayuki Omatou, Mio Nakamukai, Makoto Sono, Yuhi Fukunaga, Tomonori Masuda, Munemasa Nagao, Takaki Yoshikawa, Satoshi Ogawa, Yukiko Himaramats, Takahisa Maruno, Yuki Nakanishi, Hiroshi Sono (Dept. Gastroenterology & Hepatology, Kyoto Univ.)

SWI/SNF複合体のサブユニットであるBrg1はマウス膵臓の増殖・転移に重要である
荒木 理，福田 宣久，津田 寿之，尾松 万悠紀，並川 実桝，橘 樹，福永 裕一，竹田 保晃，長尾 宗政，吉川 英香，小川 知，平松 由紀子，丸野 貞久，中尾 萌，妹尾 涼（京都大・院医・消化器内科学）
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.

S17-1 Roles and mechanisms of cellular senescence in the regulation of carcinogenesis
Eiji Hara(Dept. Inst. for Microbial Diseases, Osaka Univ., IFREC, Osaka Univ.)

S17-2 Telomere shortening and hTERT activation contribute stem cells and carcinogenesis of the pancreas

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 have 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 two 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.

S17-3 Phenotypic trade-off between hair graying and melanoma
Ermi Nishiuma (Tokyo Medical and Dental University, Medical Research Institute)

S17-4 Microenvironmental regulation of somatic evolution and tumorigenesis
Masayuki Fujii, Toshiro Sato (Dept. Organoid Med., Keio Univ., Sch. Med.)

S17-5 Age-related mutations in esophagal epithelium
Seishi Ogawa (Dept. Path., & Tumor Biol., Kyoto Univ.)

S17-6 Age-dependent phenotypic conversion from neuronal activity to neuro-inflammation in glioblastoma progression

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 have 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 two 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.
Recent advances in diagnostic imaging and treatment techniques have markedly improved the prognosis of patients with hepatocellular carcinoma (HCC). Safety and local curability of hepatic resection for patients with early stage HCC have dramatically improved. On the other hand, there is no established strategy to prevent metastatic recurrence of HCC after surgery. For advanced-stage HCC, multi-molecular target agents have become available in recent years, and last year combination therapy with an immune checkpoint inhibitor and an angiogenic factor inhibitor was shown to be effective. Systemic therapy for HCC is thus about to enter a new era. However, no valid biomarkers for therapeutic efficacy, safety, and drug selection have yet been established.

To further improve patient prognosis, it will be necessary to clarify the underlying carcinogenic factors and to establish a molecular classification for HCC by molecular and genomic approaches combined with immunological analysis.

In this symposium, we would like to summarize and discuss recent advances and future challenges in basic and clinical research on HCC, with the aim of further improving the prognosis of HCC patients.

**SSTS-1**

**Precision pathology diagnosis of hepatocellular carcinoma**

Michie Sakamoto (Dept. Pathol. Keio Univ. Sch. Med.)

**肝細胞癌の精密病理診断**

坂元 学宇（慶應大・医・病理）

**SSTS-2**

**Liver cancer whole genome analysis**

Hidekaki Nakagawa (RIKEN IMS)

**肝臓がんの全ゲノム解析**

中川 英刀（理研・生命医科学）

**SSTS-3**

**Hepatic stellate cell autophagy promotes HCC growth via GDF15**


**肝星細胞がオートファジー依存的で分泌するGDF15が肝細胞癌の進展に寄与する**

明神 悠太、髙田 昌人、小玉 尚宏、牧野 祐紀、阪森 亮太郎、巽 智秀、満上 雅史、江口 英利、竹原 徹郎 （大阪大・医・消化器内科、大阪大・医・消化器外科、国立医療研究機構・ゲノム医学）

**SSTS-4**

**Real-world evidence of multi-systemic therapy for hepatocellular carcinoma**

Hiroshi Aikata, Masami Yamauchi, Atsushi Ono, Daiki Miki, Masataka Tsuge, Kazuaki Chayama (The Univ. of Hiroshima Gastroenterology & Metabolism)

**肝癌患者治療のreal-world evidence**

相方 憲、山内 理海、大野 敦司、三木 大輝、栃枝 雅貴、茶山 一彰（広島大・消化器・代謝内科）

**SSTS-5**

**Challenge to prevent recurrence after surgical treatment for liver cancer**

Tsuyoshi Kobayashi, Masahiro Ohira, Masateru Yamamoto, Daisuke Takei, Hirosho Mashima, Michinori Hamaoka, Masakazu Hashimoto, Naoki Tanine, Shintaro Kuroda, Hiyoyuki Tahara, Kentaro Ide, Yuka Tanaka, Hideki Ohdan (Dept. Gastroenterological & Transplant Surg., Hiroshima Univ.)

**肝癌外科治療後の再発予防に向けた取り組み**

小林 聡、大平 眞裕、山本 将輝、竹井 大祐、真島 宏治、濱岡 道則、橋本 昌和、谷澤 康樹、黒田 慎太郎、田原 裕之、井手 俊太郎、田中 友雄、大村 秀樹（広島大・消化器・移植外科）
**Room 3**

**LS-9**  
**MSD K.K.**  
**MSD 株式会社**

*Development of cancer immunotherapy based on immunogenome analysis*  
Hiroyoshi Nishikawa (Division of Cancer Immunology, Research Institute/Exploratory Oncology Research and Clinical Trial Center, National Cancer Center / Department of Immunology, Nagoya University Graduate School of Medicine)

Chair: Takuya Tsunoda (Division of Medical Oncology, Department of Medicine, Showa University School of Medicine)

*免疫ゲノム解析に基づくがん免疫療法の開発*  
西川 博嘉（国立がん研究センター 研究所 腫瘍免疫研究分野／先端医療開発センター 免疫 TR 分野／名古屋大学大学院 医学系研究科 微生物・免疫学講座 分子細胞免疫学）

座長：角田 卓也（昭和大学 医学部内科学講座 腫瘍内科部門）

**Room 7**

**LS-12**  
**Illumina K.K.**  
**イルミナ株式会社**

*Cancer Genomics –implication of whole genome sequencing-*  
Ken Yamaguchi (Shizuoka Cancer Center)

Chair: Hideki Hanaoka (Regional Segment Marketing, Illumina K.K.)

*がんゲノム医療における全ゲノム解析の意義*  
山口 健（静岡県立静岡がんセンター）

座長：花岡 秀樹（イルミナ株式会社 セグメントマーケティング部）

**Room 4**

**LS-10**  
**Berkeley Lights Inc. / Nikon Corporation**  
**バーグレイライト / 株式会社ニコン**

*Advanced T Cell Analytics Using Digital Cell Biology at Light Speed*  
Yue Geng (Berkeley Lights Inc.)

Chair: Yasujiro Kiyota (Nikon Corporation)

*デジタルセルバイオロジーが開く新しい世界*  
ゲン ウェ （バーグレイライト インコーポレイテッド）

座長：満田 泰次郎（株式会社ニコンヘルスケア事業本部システム事業推進部）

**Room 8**

**LS-13**  
**DAIICHI SANKYO COMPANY, LIMITED**  
**第一三共株式会社**

*Development of treatment strategy for HER2-positive breast cancer*  
Yasuo Miyoshi (Department of Breast and Endocrine Surgery Hyogo, College of Medicine)

Chair: Masakazu Toi (Kyoto University)

*HER2陽性乳癌の治療戦略：新たな展開*  
三好 康雄（兵庫医科大学 乳腺・内分泌外科）

座長：戸井 雅和（京都大学）

**Room 5**

**LS-11**  
**Toray Industries, Inc.**  
**東レ株式会社**

*RNA Expression and Methylation in Liquid Biopsy*  
Hideshi Ishii (Department of Medical Data Science, Graduate School of Medicine, Osaka University)

Chair: Takahiro Ochiya (Department of Molecular and Cellular Medicine, Institute of Medical Science, Tokyo Medical University)

*RNA 発現とメチル化によるリキッドバイオプシーの新展開*  
石井 秀始（大阪大学大学院 医学系研究科 共同研究講座 療法データサイエンス学）

座長：落谷 孝広（東京医科大学 医学総合研究所 分子細胞治療研究部門）
Pathological approach pioneers cancer research (JCA-JSP Joint Symposium)

Chairpersons: Ignacio Wistuba (Translational Mol. Path., Univ. of Texas & MD Anderson Cancer Ctr.)
Mori Morii (Dept. Pathol., Osaka Univ. Grad. Sch. of Med.)

Pathologists everyday observe tumor cells through microscope. Various interactions take place between tumor and stromal cells. Intra-tumoral interaction also occurs among tumor cells. Live imaging microscopy captures vivid appearance of such interactions. Microscopic observation with fixed sample gives us a screen-shot image of such interactions. These interactions determine tumor cells and their understanding will lead to the development of novel drugs. This symposium is aimed to talk about “tumors” with members of Japan Society of Pathology (JSP) who everyday observe tumor cells. Live imaging sheds light on novel movement of tumors when they migrate collectively. Observation on tumor-stromal interaction pioneers new anti-cancer therapies. Moreover, images under special type of light give a novel understanding of carcinogenesis and progression of tumors. We hope everybody enjoy “tumors worlds” with JSP members.

CS4-1 Heterogenous appearance of tumor cells from the viewpoint of pathologic specimen
Eiichi Morii (Dept. Pathol., Osaka Univ. Grad. Sch. of Med.)

CS4-2 Tissue-based Immuno-profiling Strategies in Lung Cancer
Ignacio Wistuba (Dept. Translational Mol. Path., UT MD Anderson Cancer Ctr.)

CS4-3 Imaging of cancer cell movement
Etsuko Kiyokawa (Dept Oncol. Pathol., Kanazawa Med. Univ. Sch. Med.)

CS4-4 Stromal biology of cancer and its relevance in developing new anticancer therapeutics
Atsushi Enomoto (Dept. Pathol., Nagoya Univ. Grad. Sch. Med.)

CS4-5 Development of a new mouse model and imaging sensor technology to elucidate the emergence of pancreatic duct carcinoma

 Symposium on Specific Tumors

Room 2 Oct. 3 (Sat.) 13:45-16:15

SS56 Recent progression of pediatric/adolescent and young adult cancers

Junko Takita (Dept. Pediatrics, Grad. Sch. of Med., Kyoto Univ.)

Pediatric cancers are relatively uncommon with approximately 1 in 7,000 children aged at younger than 15 years. However, cancer is the most frequent cause of pediatric mortality in Japan. Overall survival rates for pediatric cancers have improved in the past three decades, while refractory or relapsed cases still have a very poor prognosis. On the other hands, approximately 70,000 new cases of invasive cancer diagnosed annually are among adolescents and young adults (AYA) aged 15 to 39 years. Currently, this age group is not shown the same improved survival as either older or younger cohorts. Therefore, development for new therapeutic strategies for intractable pediatric and AYA cancers is needed. A better understanding of biological features of these cancers is importantly in order to develop more specific and successful treatment strategies. In this Symposium, cutting-edge researches in the field of pediatric and AYA cancer will be discussed recent progress across different types of cancer.

SS56-1 Recent progression in rhabdomyosarcoma: differentiation, cell cycle, and cancer metabolism
Ken Kikuchi1,2, Haisee Hossin1 (1Dept. Pediatrics, Kyoto Pref. Univ. of Med., 2Dept. Pediatrics, Uji Takeda Hosp.)

SS56-2 A novel immunotherapeutic approach for osteosarcoma by targeting tumor-associated macrophages

SS56-3 The roles of a glycosylation-related gene in aggressive osteosarcoma and its potential as a therapeutic target
Kentarou Watanabe1, Shota Kato1, Tomoya Isobe1, Eito Ogata1, Keisuke Tatsaka1, Hiroo Ueno2, Yasuhito Nannaya2, Hiroko Tanaka2, Yuichi Shiraiishi1, Kenichi Chiba1, Katsusugu Umeda1, Mitsuru Hiwabara3, Satoru Miyano3, Seishi Ogawa3, Junko Takita4 (4Dept. Ped. The Univ. of Tokyo, 5Dept. Ped. The Univ. of Tokyo, 6Dept. Ped. The Univ. of Tokyo, 7Dept. Ped. The Univ. of Tokyo, 8Dept. Ped. The Univ. of Tokyo, 9Lab. DNA information analysis HGC LMS The Univ. of Tokyo, 1Ctr. Cancer Genomics & Advanced Therap. NCC, 2Dept. Cell Therap. & Transplant. Med. The Univ. of Tokyo)

SS56-4 Genomic and molecular biological analyses of pediatric, adolescent and young adult brain tumors

SS56-5 Omics-analysis of pediatric hematological malignancies

Small AYA pediatric leukemia in the OMICS analysis
SST6-6  NCC Oncopanel Ped: A novel cancer gene panel test for pediatric solid tumors

SST6-7  Tumor-tropic liposome-mediated therapeutic delivery of mRNA for pediatric / adolescent and young adult cancers
Shoji Saito(1), Eichi Akahoshi(2), Mitsuko Ishihara-Sugan(2), Shigei Yagyu(2), Yozab Nakaw(1) (1Dept. Pediatrics, Shinsu Univ. Sch. of Med., (2)Corporate Res. & Development Ctr., Toshiba Corporation) Small AYAがんに対する腫瘍指向性リポソームを用いた新規mRNA医薬の開発
齋藤 勝治, 赤星 英一, 曽栄 美津子, 柳生 茂希, 中野 洋三(信州大・医・小児医学教室, 東京薬科大学開発研究科)

Symposia
Room 3 Oct. 3 (Sat.) 13:45-16:15  E

S18  Metabolism in Cancer
座長: 中山 敏一 (九州大・生医研・分子医学分野)

The metabolic alterations in cancer cells has been recently recognized as one of the hallmarks of cancer, and their metabolic features are shown to be associated with the transformation and the progression of cancer cells. This symposium entitled “Metabolism in Cancer” will show you the recent leading-edge topics on metabolism/metabolites in cancer by six presentations including four invited and two short talks selected from open participants. The topics include the role of glycolytic enzyme, PKMI in small cell lung cancer, the importance of branched chain amino acid transference (BCAT1) in chronic myeloid leukemia, the unveiled role of glutamin metabolism in cancer by proteomics analyses, and the effect of gut microbial metabolites on liver cancer as well as the glutamine-regulated tumor plasticity and the metabolic vulnerability in prostate cancer. We welcome lively discussions.

S18-1  A dietary intervention enhances new metabolism-targeting therapy of deadly lung cancer in mouse preclinical models.

S18-2  Gut microbial metabolite and obesity-associated liver cancer
Naoko Ohtani, Tomonomori Kamiya, Fumitaka Kamachi, Ryota Yamagishi (Dept. Pathophysiol., Osaka City Univ. Grad. Sch. Med.)

S18-3  Regulation of amino acid metabolism in myeloid leukemia

S18-4  Metabolic dynamics within tumor microenvironments towards cancer plasticity

S18-5  Pharmacologically targetable metabolic vulnerability in prostate cancer carrying RB1-SUCL2 deletion.

S18-6  A shift in glutamine nitrogen metabolism contributes to the malignant progression of cancer

GRルミシアンからの窒素代謝の変化はがんの悪化進歩に必要である： “第二のワールプルプル効果”の発見
中山 敏一 (九州大・生医研・分子医学科)
A wide variety of RNA molecules such as messenger RNA, t-RNA, rRNA, miRNA and IncRNA are known to be dysregulated in cancer, which may cause cancer progression and metastasis. In addition, RNA modification patterns and RNA splicing are widely linked to development of cancer, and the dysregulation of RNA modification pathways and RNA splicing also emerged as a contributor to cancer. In this symposium, researcher who are specialists of these fields of RNA in cancer research. We will discuss the latest topics of RNA in cancer.

**$19-1$ Pre-mRNA processing factor 19 (PRPF19) as a key regulator in aging and cancer**

**$19-2$ A Thread in the Tapestry of Science: Aging and Cancer**
Curtis C Harris (LHC, NIH, NCI, Bethesda, MD, USA)

**$19-3$ A novel long non-coding RNA, TILR, suppresses the apoptosis by inhibiting p53 expression**
Taisuke Kajino (Aichi Cancer Ctr. Res. Inst., Aichi Cancer Ctr.)

**$19-4$ miRNA Methylation**

**International Sessions**

**IS11**
Epigenetic therapeutic targets in cancer microenvironment
Alfred Sze-Lok Cheng (Sch. of Biomed. Sci., The Chinese Univ. of Hong Kong)

Alter epigenetic regulation is not only limited in cancer cells, but also associated with reprogramming of microenvironmental stromal-inflammatory factors, angiogenesis, and immune escape. Recent studies have demonstrated that targeting epigenetic regulatory mechanism in such cancer-associated cells may provide a new paradigm for translational research. We invite you to join Symposium Cochair Yutaka Kondo and Alfred Cheng as we discuss the growing interest in virus associated reprogramming, epigenetic regulation of tumor immune reaction, EMT and metabolism, as well as non-coding RNA based DNA maintenance system. Our deeper mechanistic understanding may lead to development of new therapies and efficient combination with epigenetic drugs for cancer treatment. The goal of this Symposium is to offer novel insight into the expanding repertoire of epigenetic translational research.

**IS11-1** Epigenetic and transcriptional control of epithelial-mesenchymal plasticity

**IS11-2** Histone Demethylase KDM4C promotes prostate cancer metastasis via modulation of c-Myc and metabolism reprogramming
Chih-Pin Chu (Ching-Yu Lin, Bi-Juan Wang, Chiou-Hwa Yuh (ICSM, NHRI, IMGM, NHI)

**IS11-3** Chromatin Structural Aberrations due to oncovirus infection activate neighboring oncogenes through enhancer activation

**IS11-4** HTLV-1 bZIP factor RNA and Protein induce TP73 to enhance the survival of ATL cells
Kosuke Toyoda, Jun-ichiro Yasunaga, Azusa Tanaka, Masao Matsuoka (Hematol., Rheumatol., & Infectious Diseases, Kumamoto Univ., Kumamoto, Japan)

**IS11-5** Long Non-coding RNA TUG1 governs replication stress in cancer cells

**IS11-6** Delineating the epigenetic vulnerabilities of tumor immunoevasion for combination immunotherapy
Alfred Cheng (Sch. of Biomed. Sci., The Chinese Univ. of Hong Kong)
IS12: Risk of Gastric Cancer following H pylori eradication and precision strategies for surveillance

IS2-1: Impact of virus integration on development of hepatocellular carcinoma

IS2-2: Screening for Nasopharyngeal Cancer in asymptomatic men by Liquid Biopsy
K.C. Allen Chan (Dept. Chem. Pathol., CUHK)

IS2-3: Complete viral genome sequencing of Japanese tonsil-derived EBV strains and their phylogenetic positions
Teru Kanda (‘Div. Microbiol., Faculty of Med., Tohoku Med. & Pharm. Univ.)

IS2-4: Liver Fluke-Associated Biliary Tract Cancer: Molecular Biology and Genomic Landscape
Apinya Isusuk (‘CARI, KU, ‘CMMLD, KCU)

IS2-6: Epigenetic stratification of HPV-associated oropharyngeal squamous cell carcinoma and new therapeutic strategies

S20: Mechanism of chromosome translocations in leukemia
Satoshi Tashiro, Jiyun Sun (Dept. Cell Biol., RIRBM, Hiroshima Univ.)

S20-1: Spatial-temporal regulation of Aurora B kinase activity through liquid-liquid phase separation

S20-2: Chromatin modification dynamics and gene regulation in living cells

S20-3: Non-coding RNAs in the 3D genome architecture in recurrent breast cancer
Noriko Saitoh, Yuichio Ichikawa, Megumi Fukuoka, Hiroaki Tachiwana, Tatsuro Yamamoto (The Cancer Inst. of JFCR)

S20-4: Local nucelosome motion in living human cells revealed by single nucleosome imaging
Kazuhiro Maeshima (NIG)
Genome medicine has a major impact in guiding diagnoses and treatment, especially in the fields of oncology. In cancer genome medicine, the area of hereditary tumor has been a typical example showing us the development from basic research to clinical practice was so important. Significant advances of technology in next-generation sequencing have led to major changes in the research and clinical practice of hereditary tumors. Moreover, "clinical sequencing" in cancer genome medicine has been implemented, and it also became important to consider how to manage a secondary finding in identified in practice of hereditary tumor medicine. In this session, we will have 6 speakers presenting on various topics such as genome study of hereditary tumors based on NGS technology, hereditary breast and ovarian cancers, hereditary gastrointestinal tumors, search for therapeutic target of NF-associated tumors, multi-gene panel testing for hereditary tumors, and appropriate disclosure of genomic information in genome medicine. We hope that researchers and experts at the forefront of hereditary tumors will exchange views on current issues related to hereditary tumors and that information will be useful for research and therapy in the near future.