POSTER SESSION ABSTRACTS: TITLES AND AUTHORS

Poster Session A: Sunday, December 11, 2022, 5:30 p.m.-7:30 p.m.

Cancer Genomics and Cancer Evolution (A01-A23)
Cancer Immunology (A24-A33)
Epigenetics; Cancer Plasticity and Heterogeneity; RNA Networks (A34)
Tumor Microenvironment (A35-A70)
Other (A71-A92)

Poster Session B: Monday, December 12, 2022, 5:30 p.m.-7:30 p.m.

Cancer Immunotherapy (B01-B25)
Epigenetics; Cancer Plasticity and Heterogeneity; RNA Networks (B32-B52)
Preclinical Models; Organoids; Genetic and Transplantation Models (B53-B74)
Other (B75-B88)

Poster Session C: Tuesday, December 13, 2022, 5:30 p.m.-7:30 p.m.

Cancer Metabolomics (C01-C09)
Drug Resistance (C10-C34)
Early Detection of Cancer (C36-C47)
Genetic and Environmental Factors in Carcinogenesis (C48-C60)
Genome Instability (C61-C69)
New Technologies for Cancer Imaging and Other Emerging Technologies (C71-C82)
Other (C84-C91)
Cancer Genomics and Cancer Evolution


A02  Clonal evolution in systemically untreated cancer: The natural history of metastases. Stephanie Kavan¹, Lars vB Andersen², Martin J. Larsen², Marianne Vogsen², Malene G. Hildebrandt², Marianne Ewertz², Anne Marie Bak Jylling², Torben A. Kruse², Mads Thomassen². ¹Odense University Hospital, Odense C, Denmark, ²Odense University Hospital, Odense, Denmark.


A04  Molecular drivers and therapeutic targets for neuroendocrine transformation in lung cancer. Triparna Sen. Icahn School of Medicine at Mount Sinai, New York, NY.

A05  Associations between cardiorespiratory fitness in youth and incidence of site-specific cancer in men: A population-based cohort study with register linkage. Aron Onerup¹, Agnes af Geijerstam², Elin Ekbloom-Bak³, Hans-Georg Kuhn⁴, Kirsten Mehlig², Lauren Lissner², Maria Åberg², Mats Börjesson⁵. ¹Department of Pediatrics, Institute of Clinical Sciences, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden, ²School of Public Health and Community Medicine, Institute of Medicine, University of Gothenburg, Gothenburg, Sweden, ³Department of Physical Activity and Health, The Swedish School of Sport and Health Sciences, Stockholm, Sweden, ⁴Department of Clinical Neuroscience, Institute of Neuroscience and Physiology, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden, ⁵Department of Molecular and Clinical Medicine, Center for Health and Performance, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden.

A06  PRMT5 mutation signatures in cancer cells. Shayaan Rasheed¹, Ruben Petreaca², Renee Bouley², Ryan Yoder². ¹The Ohio State University, Columbus, OH, ²The Ohio State University, Marion, OH.

A08  Investigating interactions between KAT5 and RAD52 and their influence on DNA repair. Lauren Frank, Kimberly Hardison, Tila Hawk, Ruben Petreaca, Renee Bouley. The Ohio State University, Marion, OH.

A09  Identifying and characterizing the potential role of THOC7 in driving medulloblastoma growth and progression. Shahad Abdulsahib, Manjeet Rao, Saif Nirzhor, Santosh Timilsina. The University of Texas Health Science Center at San Antonio, San Antonio, TX.

A10  Oncogenic TRIM37 links chemoresistant and metastatic fate in triple negative breast cancer. Song Lou, Sanchita Bhatnagar. UC Davis, Davis, CA.
A11 Aberrantly expressed C/EBPα in B cells functionally inhibits MEF2 family transcription factors: A possible mechanism of leukemia development by CEBP-IGH. Koya Odaira¹, Takahiko Yasuda², Kentaro Okada¹, Takuya Shimooka¹, Yukino Kojima¹, Mina Noura¹, Shogo Tamura¹, Shingo Kurahashi³, Eisuke Iwamoto², Masashi Sanada², Tetsuhito Kojima⁴, Shinobu Tsuzuki⁵, Fumihiko Hayakawa¹. ¹Nagoya University Graduate School of Medicine, Nagoya, Japan, ²National Hospital Organization Nagoya Medical Center, Nagoya, Japan, ³Toyohashi Municipal Hospital, Toyohashi, Japan, ⁴Nagoya University Graduate School of Medicine, Aichi Health Promotion Foundation, Nagoya, Japan, ⁵Aichi Medical University School of Medicine, Nagakute, Japan.

A12 Cellular senescence is involved in spatial evolution in colorectal cancer. Soon Sang Park, Tae Jun Park. Ajou University School of Medicine, Suwon, Korea, Republic of.

A13 Will BCL2 be a potent therapeutic target for systemic chronic active Epstein-Barr virus disease? Ayaka Ohashi¹, Mayumi Yoshimori², Miwako Nishio², Kaoru Koike², Norio Shimizu², Kazuo Yudo¹, Morito Kurata², Ayako Arai¹. ¹St. Marianna University School of Medicine, Kawasaki, Japan, ²Tokyo Medical and Dental University (TMDU), Tokyo, Japan.

A14 Impact of mutation in a putative src homology domain and its effect on G1 cell cycle protein stability. Laurence Seabra. University of Chester, Chester CH1 4BJ, United Kingdom.


A17 Genomic evolution of pancreatic cancer at single-cell resolution. Haochen Zhang¹, Palash Sashittal², Elias-Ramzy Karnoub¹, Benjamin J. Raphael², Christine A. Iacobuzio-Donahue¹. ¹Memorial Sloan Kettering Cancer Center, New York, NY, ²Princeton University, Princeton, NJ.

A18 Mutation and co-mutation landscape of ERBB2 altered advanced NSCLC. Lingzhi Hong¹, Leylah M Drusbosky², Yinyin Wang³, Yuanyuan Xiong⁴, Rongrong Chen⁴, Simon Heeke⁵, Monique Nilsson⁶, John V Heymach⁶, Xiuning Le⁶. ¹Department of Imaging Physics, The University of Texas MD Anderson Cancer Center, Houston, TX, ²Guardant Health, Inc., Redwood City, CA, ³4 Peking Union Medical College Hospital, Beijing, China (Mainland), ⁴Geneplus-Beijing Institute, Beijing, China (Mainland), ⁵Department of Thoracic/Head and Neck Medical Oncology, The University of Texas MD Anderson Cancer Center, Houston, TX.

A19 The pattern of mutations for TCGA LUAD and BRCA clustered genes targeted by miRNAs. Claire Y. Shen¹, Yongsheng Bai². ¹Jordan High School, Katy, TX, ²Eastern Michigan University, Ypsilanti, MI.
A20 Evolutionary designed and tumor microenvironment biomarkers guided machine learning to predict DCIS progression, upstaging, and early metastasis. Mehdi Damaghi, Zainab Raza, Mahmudul Hasan, Ji Dong Karen Bai, Joel Saltz. Stony Brook University, Stony Brook, NY.

A21 Novel role of BRCA1 in metastasis: Amoeboid cell motility. Hala Kassis, George Abu Khadra, Judith Horev, Ori Moskovich, Ilan Tsarfaty. Tel Aviv University, Tel Aviv, Israel.

A23 Molecular mechanism of leukemogenesis induced by NUP98-fusion genes. Yutaka Shima, Issay Kitabayashi. National Cancer Center, Tokyo, Japan.

Cancer Immunology

A24 YTHDF2 transcriptionally programs effector T cells to boost tumor immunity. Jiajie Hou. Sun Yat-sen University Cancer Center, Guangzhou, PA, China (Mainland).

A26 The Cancer Epitope Database and Analysis Resource (CEDAR). Zeynep Kosaloglu-Yalcin1, Nina Blazeska1, Hannah Carter2, Morten Nielsen3, Stephen Schoenberger4, Alessandro Sette5, Bjoern Peters1. 1La Jolla Institute for Immunology, La Jolla, CA, 2University of California San Diego, La Jolla, CA, 3The Technical University of Denmark, Lyngby, Denmark, 4La Jolla Institute for Immunology, La Jolla, CA.


A28 Distinct genetic requirements and morphological features of antibody- and phosphatidylserine-mediated phagocytosis. Daan Vorselen1, Roarke A. Kamber2, Ramon L.D. Labitigan2, Aaron P. Van Loon2, Eric Peterman3, Melissa Delgado2, Jeffrey Rasmussen2, Michael C. Bassik2, Julie A. Theriot3. 1Wageningen University & Research, Wageningen, Netherlands, 2Stanford University, Stanford, CA, 3University of Washington, Seattle, WA.

A29 Prognostic impact of immune cells and their spatial interplay in urothelial cancer using BLEACH&STAIN. Nicolaus F. Debatin1, Elena Bady1, Tim Mandelkow1, Zhihao Huang1, Henning Plage2, Maximilian Lennartz1, Guido Sauter1, Henrik Zecha3, Thorsten Schlommm2, Niclas Blessin1. 1Institute of Pathology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany, 2Department of Urology, Charité Berlin, Berlin, Germany, 3Department of Urology, Albertinen Hospital, Hamburg, Germany.

A30 Prevalence and spatial interplay of TIM3+ and CTLA-4+ immune cells in human carcinomas using 21 marker BLEACH&STAIN. Zhihao Huang, Nicolaus F. Debati, Elena Bady, Jan H. Müller, Tim Mandelkow, Sören Weidemann, Christoph Fraune, Christian
Bernreuther, Guido Sauter, Niclas C. Blessin. Institute of Pathology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany.

A31 The landscape of HLA-presenting antigenic peptides and their immunogenic heterogeneity. Serina Tokita, Takayuki Kanaseki, Toshihiko Torigoe. Sapporo Medical University, Sapporo, Japan.

A32 The role of cholecystokinin-B receptor expression in liver stem cell activation during liver injury. Martha Gay¹, Jack Drda², Wenqiang Chen¹, Narayan Shivapurkar¹, Jill Smith¹. ¹Georgetown University, Washington, DC, ²Dickinson College, Carlisle, PA.

A33 Calreticulin is induced by anticancer drugs in colorectal cancer cell lines and organoids. Satoru Naito¹, Taiki Kajiwara¹, Hideaki Karasawa¹, Minoru Kobayashi¹, Ono Tomoyuki¹, Ryo Funayama², Keiko Nakayama³, Shinobu Ohnuma¹, Michiaki Unno¹. ¹Department of Surgery, Graduate School of Medicine, Tohoku University, Sendai, Japan, ²Department of Cell Proliferation, Graduate School of Medicine, Tohoku University, Sendai, Japan, ³Department of Cell Proliferation, ART, Graduate School of Medicine, Tohoku University, Sendai, Japan.

Epigenetics; Cancer Plasticity and Heterogeneity; RNA Networks

A34 Methylation synthetic lethality: Methylation-silenced genes as a rich source of combination partners for synthetic lethality. Toshikazu Ushijima¹, Satoshi Yamashita², Hideyuki Takeshima¹, Takahiro Ebata¹, Yumi Furuichi¹. ¹Hoshi University, Tokyo, Japan, ²Maebashi Institute of Technology, Maebashi, Japan.

Tumor Microenvironment

A35 Analysis of MRP4 and PGE2 EP4 function in ovarian cancer. Jocelyn C. Reader¹, Mc Millan N. Ching², Cong Ava Fan³, Mercy Amofa¹, Leo Chan⁴, Teklu Legesse⁵, Paul Staats⁵, Olga Goloubeva⁵, Fuhua Xu⁵, Amy Fulton⁵, Dana M. Roque⁵, Gautam G. Rao⁵. ¹University of Maryland Eastern Shore, Princess Anne, MD, ²Johns Hopkins University, Baltimore, MD, ³Cleveland Clinic Lerner College of Medicine, Cleveland, OH, ⁴Perkin Elmer, Lawrence, MA, ⁵University of Maryland School of Medicine, Baltimore, MD.

A36 Utilizing deep learning technology to streamline development of next generation of hypoxic tumor radiosensitizers. Martin Benej¹, Mark Mitton-Fry¹, Ben Haines¹, Stephen S. MacKinnon², Ioanna Papandreou¹, Nicholas C. Denko¹. ¹The Ohio State University, Columbus, OH, ²Cyclica Inc., Toronto, ON, Canada.
A37  Suppression of androgen receptor signaling induces prostate cancer metastasis via activation of the CCL20–CCR6 axis. Hiroshi Kano, Kouji Izumi, Atsushi Mizokami, Takafumi Shimada. Department of Integrative Cancer Therapy and Urology, Kanazawa University Graduate School of Medical Science, Kanazawa, Japan.

A38  An ecosystem mimicking brain development promotes metastatic growth of small cell lung cancer in the brain. Fangfei Qu¹, Siqi Cao¹, Griffin G. Hartmann¹, Wojciech P. Michno¹, Alyssa Punö¹, Alexandros P. Drainas¹, Chioma Madubata¹, Jun Kim¹, Maria P. Pages², Kathryn Simpson², Debadrita Bhattacharya¹, Angua Toland¹, Christina S. Kong¹, Caroline Dive², Monte M. Winslow¹, Anca Pasca¹, Julien Sage¹. ¹Stanford University, Stanford, CA, ²University of Manchester, Manchester, United Kingdom.

A39  Oxygen sensing BACH1 regulates hypoxic chromatin remodeling in triple negative breast cancer. Long Chi Nguyen¹, Christopher Dann², Dongbo Yang¹, Emily Shi¹, Thomas Li¹, Andrea Valdespino³, Raven Waston¹, Lydia Robinson-Mailman¹, Wenchao Liu¹, Leticia Stock¹, Joseph Wynne⁴, Mitsuyoson Matsumoto⁵, Kazuhiko Igarashi⁵, Marsha Rich Rosner¹. ¹University of Chicago, Chicago, IL, ²University of California, Los Angeles, Los Angeles, CA, ³University of Pennsylvania, Philadelphia, PA, ⁴Food and Drug Administration, Washington D.C., ⁵Tohoku University Graduate School of Medicine, Sendai, Japan.

A40  Anti-PD-1 therapy reduces tumor hypoxia: Evaluation with pimonidazole and [¹⁸F]fluoromisonidazole as hypoxia probes. Kohei Nakajima¹, Mitsunori Homma¹, Motofumi Suzuki¹, Yuta Yokouchi¹, Takuma Matsuda¹, Hideo Takakura¹, Kenji Hirata², Yuji Kuge³, Mikako Ogawa¹. ¹Graduate School of Pharmaceutical Sciences, Hokkaido University, Sapporo, Japan, ²Graduate School of Medicine, Hokkaido University, Sapporo, Japan, ³Central Institute of Isotope Science, Hokkaido University, Sapporo, Japan.

A41  Acidic modification of tumor microenvironment is a novel mode of action of mitochondrial complex I inhibitors for anti-cancer activity. Junjiro Yoshida¹, Tomokazu Ohishi¹, Hikaru Abe¹, Shun-ichi Ohba², Hiroyuki Inoue², Ihomi Usami², Masahide Amemiya¹, Raphael Oriez¹, Takumi Watanabe¹, Takao Shimizu¹, Masakatsu Shibasaki¹, Manabu Kawada¹. ¹Institute of Microbial Chemistry (BIKAKEN), Tokyo, Japan, ²Institute of Microbial Chemistry (BIKAKEN), Shizuoka, Japan.

A42  FGFR2 as a potential therapeutic target for prevention of cutaneous squamous cell carcinoma. Megha Thakur¹, Okkyung Rho¹, Alok Khandelwal², Steve Carbajal¹, Cherie-Ann O. Nathan², John DiGiovanni¹. ¹The University of Texas at Austin, Austin, TX, ²Louisiana State University Health Sciences Center, Shreveport, LA.

A44  High UHRF1 contributes to increased malignancy in RB-null tumors. Claudia A. Benavente. University of California, Irvine, Irvine, CA.

A46 Isolated tumor vessel endothelial cells from human colon cancer exhibit long-term transcriptional memory reflecting the tumor microenvironment. **Michael Stürzl**¹, Maximilian Fuchs¹, Charles G. Anchang¹, Richard Demmler², Arif B. Ekici², Carol I. Geppert², Claudia Günther², Susanne Merkel², Vera S. Schellerer², Elisabeth Naschberger². ¹Division of Molecular and Experimental Surgery, Translational Research Center, Universitätsklinikum Erlangen, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Erlangen, Germany, ²Division of Molecular and Experimental Surgery, Translational Research Center, Universitätsklinikum Erlangen, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Erlangen, Germany.

A47 Tumor-specific recognition and modulation of macrophages through targeting retinoic X receptor beta. **Hong Guo**, Yuexuan Li, Jiaqi Zhao, Jibin Guan, Nianwu Wang, Yingzheng Xu, Jesse Williams, Hong-Bo Pang. University of Minnesota, Minneapolis, MN.


A49 Hydrogels to regulate extracellular pH in the breast cancer microenvironment and improve chemotherapeutic efficacy. **Zahra Ahmed**, Kevin LoGiudice. Brown University, Providence, RI.

A50 Glycan CA19-9-mediated remodeling of the pancreatic tumor microenvironment. **Jasper Hsu**¹, Sejin Chung², Angelica E. Rock¹, Shira R. Okhovat³, TaeGyu Oh³, Kristina L. Peck², Susan M. Kaech³, Dannielle D. Engle³. ¹University of California, San Diego; Salk Institute, La Jolla, CA, ²Lustgarten Foundation, San Diego, CA, ³Salk Institute, La Jolla, CA.

A51 Mitochondrial hyperactivation is a targetable signature of prostate cancer bone metastases. **Shang Su**¹, Ke Liu², Jing Xing², Yawei Zhao¹, Ruihua Liu¹, Bin Chen², Xiaohong Li¹. ¹The University of Toledo, Toledo, OH, ²Michigan State University, Grand Rapids, MI.

A52 Glycoproteomics data analysis of clear cell renal cell carcinoma and lung adenocarcinoma using FragPipe glycoproteomics workflow. **Yi Hsiao**¹, Ginny Xiaohe Li², Daniel A. Polasky², Saravana M. Dhanasekaran³, Alexey I. Nesvizhskii⁴. ¹Department of Computational Medicine and Bioinformatics, University of Michigan, Ann Arbor, MI, ²Department of Pathology, University of Michigan, Ann Arbor, MI, ³Michigan Center for

A53 Interleukin-8 produced from cancer-associated fibroblasts suppresses the proliferation of the OCUCh-LM1 cancer cell line. **Naoki Tani**¹, Kenjiro Kimura¹, Ryota Tanaka¹, Shimpei Eguchi¹, Go Ohira¹, Shogo Tanaka¹, Hiroaki Tanaka², Masakazu Yashiro³, Shoji Kubo¹, Masaichi Ohira², Takeaki Ishizawa¹. ¹Department of Hepato-Biliary-Pancreatic Surgery, Osaka Metropolitan University Graduate School of Medicine, Osaka, Japan, ²Department of Gastroenterological Surgery, Osaka Metropolitan University Graduate School of Medicine, Osaka, Japan, ³Molecular Oncology and Therapeutics, Osaka Metropolitan University Graduate School of Medicine, Osaka, Japan.
A54  Single-cell transcriptome reveals comprehensive immune profiles of T follicular helper cell lymphomas. Sakurako Suma¹, Manabu Fujisawa¹, Yoshiaki Abe¹, Yasuhito Suehara¹, Daisuke Kaji², Takeshi Sugio³, Koji Kato⁴, Koichi Akashi⁴, Kosei Matsue⁵, Naoya Nakamura⁵, Ayako Suzuki⁷, Yutaka Suzuki¹, Shigeru Chiba¹, Mamiko Sakata-Yanagimoto¹. ¹University of Tsukuba, Tsukuba, Japan, ²Toranomon Hospital, Tokyo, Japan, ³Stanford University, Stanford, CA, ⁴Kyushu University Graduate School of Medical Science, Fukuoka, Japan, ⁵Kameda Medical Center, Kamogawa, Japan, ⁶Tokai University School of Medicine, Isehara, Japan, ⁷The University of Tokyo, Kashiwa, Japan.

A55  Nuclear EGFR as a regulator of inflammation and the tumor microenvironment. Angelica Escoto. University of Arizona, Tucson, AZ.

A56  TRIM29 promotes bladder cancer invasion by regulating the intermediate filament network and focal adhesion. Yin Wang¹, Mark Day¹, Pierre A. Coulombe¹, Phillip L. Palmbos. University of Michigan Medical School, Ann Arbor, MI.

A58  PIM1 phosphorylates ABI2 to enhance actin dynamics and promote tumor invasion. Corbin Jensen¹, Amber Clements¹, Hope Liou¹, Lauren Ball², Jennifer Bethard², Paul Langlais¹, Shailender Chauhan¹, Andrew S. Kraft¹, Anne Cress¹, Cindy Miranti¹, Ghassan Mouneimne¹, Greg Rogers¹, Noel A. Warfel¹. ¹University of Arizona, Tucson, AZ, ²Medical University of South Carolina, Charleston, SC.

A60  BLEACH&STAIN, a novel multiplex fluorescence immunohistochemistry framework that facilitates a low cost and high throughput analysis of >21 biomarkers in more than 15,000 human carcinomas. Elena Bady¹, Katharina Möller², Tim Mandelkow², Maximilian Lennartz², Franziska Büscheck², Till S. Clauditz², Eike Burandt², Guido Sauter², Sarah Minner², Niclas C. Blessin². ¹University of Arizona, Tucson, AZ, ²Medical University of South Carolina, Charleston, SC.

A61  Plasminogen activator inhibitor-1 is related to colorectal cancer liver metastasis. Tomokazu Ohishi¹, Shun-ichi Ohba², Akiko Harakawa², Hiroyuki Inoue², Manabu Kawada¹. ¹Institute of Microbial Chemistry, Tokyo, Japan, ²Institute of Microbial Chemistry, Numazu, Japan.

A62  Combination of 5-fluorouracil (5-FU) plus KRAS G12D inhibitor MRTX1133 against colorectal and pancreatic cancer cells results in immune-stimulatory cytokine patterns and observed drug synergies independent of G12D mutation. Wafik El-Deiry, Vida Tajiknia, Kelsey Huntington, Lanlan Zhou. Legorreta Cancer Center, Brown University, Providence, RI.

A63  Immunological features of NRF2-activated non-small cell lung cancers. Madoka Kawaguchi¹, Shohei Murakami¹, Haruna Takeda¹, Shigeyuki Shichino², Kazuki Hayasaka¹, Yoshinori Okada¹, Takashi Suzuki¹, Hozumi Motohashi¹. ¹Tohoku University, Sendai, Japan, ²Tokyo University of Science, Chiba, Japan.
A64 Tracking transcriptome reveals phenotypic plasticity of lung cancer-associated fibroblasts within the TRACERx study from patient to culture models. Yutaka Naito¹, Robert E. Hynds², David Novo³, Proibir Chakravarty⁴, Gavin Kelly⁴, Charles Swanton², Kazufumi Honda¹, Erik Sahai³.¹Department of Bioregulation, Institute for Advanced Medical Sciences, Nippon Medical School, Tokyo, Japan, ²Cancer Research UK Lung Cancer Centre of Excellence, University College London Cancer Institute, University College London, London, United Kingdom, ³Tumour Cell Biology Laboratory, The Francis Crick Institute, London, United Kingdom, ⁴Bioinformatics, The Francis Crick Institute, London, United Kingdom.

A65 Analysis of pathological and biological roles for chemokine receptor CXCR4 identified via reprogramming by hydrogel in meningioma stem cells. Yoshitaka Oda¹, Masumi Tsuda², Sayaka Yuzawa³, Lei Wang², Satoshi Tanikawa², Zen-ichi Tanei², Christian Mawrin⁴, Jian Ping Gong⁵, Shinya Tanaka².¹Department of Cancer Pathology, Faculty of Medicine, Hokkaido University, Sapporo, Japan, ²Department of Cancer Pathology, Faculty of Medicine, Hokkaido University, Sapporo, Japan, ³Department of Diagnostic Pathology, Asahikawa Medical University Hospital, Asahikawa, Japan, ⁴Department of Neuropathology, Otto von Guericke University, Magdeburg, Germany, ⁵Faculty of Advanced Life Science, Hokkaido University, Sapporo, Japan.

A66 Hydrogel PCDME creates pancreatic cancer stem cells in OXPHOS metabolic state with TXNIP elevation. Lei Wang¹, Yuma Aoki², Masumi Tsuda³, Yusuke Saito³, Takenori Kubota², Yoshitaka Oda³, Satoshi Hirano⁴, Jian Ping Gong⁵, Shinya Tanaka³.¹World Premier International Research Center Initiative, Institute for Chemical Reaction Design and Discovery (WPI-ICReDD), Hokkaido University, Sapporo, Japan, ²Department of Gastroenterological Surgery II, Hokkaido University Graduate School of Medicine, Sapporo, Japan, ³Department of Cancer Pathology, Faculty of Medicine, Hokkaido University, Sapporo, Japan, ⁴Department of Gastroenterological Surgery II, Faculty of Medicine, Hokkaido University, Sapporo, Japan, ⁵Faculty of Advanced Life Science, Hokkaido University, Sapporo, Japan.

A67 Adipokine adipsin enhances the adipocyte-breast cancer stem cell interaction. Yohei Shimono¹, Masahiro Mizuno¹, Behnoush Khaledian¹, Hideaki Goto², Yohei Funakoshi², Masao Maeda¹, Takenori Hayashi¹, Seiya Mizuno³, Seiji Okada⁴, Yuko Kijima¹, Motoshi Suzuki¹, Naoya Asai¹, Fumihiro Sugiyama³, Satoru Takahashi³, Hironobu Minami³.¹Fujita Health University, Toyoyake, Japan, ²Kobe University, Kobe, Japan, ³University of Tsukuba, Tsukuba, Japan, ⁴Kumamoto University, Kumamoto, Japan.

A69 SERPINA3 and LCN2 exert the osteoblastic and tumor-suppressive functions in prostate cancer. Kagenori Ito¹, Hiroyuki Fujimoto², Takahiro Kimura³, Takahiro Ochiya⁴, Yusuke Yamamoto¹.¹Laboratory of Integrative Oncology, National Cancer Center Research Institute, Tokyo, Japan, ²Department of Urology and Retropertitoneal Surgery, National Cancer Center Hospital, Tokyo, Japan, ³Department of Urology, Jikei University School of Medicine, Tokyo, Japan, ⁴Department of Molecular and Cellular Medicine, Tokyo Medical University, Tokyo, Japan.
A70 Development of novel cancer treatment targeting acidic pH responsive mitochondrial dynamics. Keisuke Maeda¹, Sho Aki¹, Motoaki Seki², Rika Tuchida¹, Tsuyoshi Osawa¹. ¹Division of Integrative Nutriomics and Oncology, The University of Tokyo, Tokyo, Japan; ²Chiba University Hospital, Chiba, Japan.

A71 Major pathologic response and prognostic score predict survival in lung cancer patients receiving neoadjuvant chemotherapy. Apar Pataer. MD Anderson Cancer Center, Houston, TX.

A73 Therapeutic targeting of the retrotranslocation of receptor tyrosine kinases. Joyce Schroeder. University of Arizona, Tucson, AZ.

A74 Impact of patient race and geographical factors on healthcare cost and utilization among U.S. lung cancer patients: Evidence from NIS sample between 2016 and 2019. Jongwha Chang¹, Mar Medina², Dong Yeong Shin³, Sun Jung Kim⁴. ¹Texas A&M University, College Station, TX; ²University of Texas at El Paso, El Paso, TX; ³New Mexico State University, Las Cruces, NM; ⁴Soonchunhyang University, Asan, Korea, Republic of.

A75 MPath PCR-Plate: Clinical software for automated plate generation of fragment assays. Sean K. Lachhander¹, John Ziegler², Aijazuddin Syed¹, Ahmet Zehir³. ¹Memorial Sloan Kettering Cancer Center, New York, NY; ²Flatiron Health, New York, NY; ³AstraZeneca, New York, NY.

A76 Deciphering mechanisms leading to glioblastoma stem cell development by loss of DAB2IP. Eun-Jin Yun¹, Dongwhi Kim¹, Jer-Tsong Hsieh², Seung Tae Baek¹. ¹POSTECH, Pohang, Korea, Republic of; ²UT Southwestern Medical Center at Dallas, Dallas, TX.

A77 Local control and toxicity outcomes with postoperative radiation therapy for high-risk neuroblastoma patients: A 20-year experience at a single center. Jeong Yun Jang, Seung Do Ahn, Yeon Joo Kim. Department of Radiation Oncology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea, Republic of.


A80 GliaTrap: A chemoattractant-embedded hydrogel to attract and kill migrating glioblastoma stem cells. Yusuke Suita¹, Nikos Tapinos¹, Saradha Miriyala¹, Merih Deniz Toruneri¹, Blessing Akobundu¹, Weizhou Yue², Lingxiao Xie², Seven Toms¹, Jie Shen². ¹Brown University, Providence, RI; ²University of Rhode Island, Kingston, RI.
A81 Screening and validation of a novel small chemical compound that inhibits pro-oncogenic signaling triggered by the Helicobacter pylori CagA oncoprotein. Takeru Hayashi\textsuperscript{1}, Wataru Ikeda\textsuperscript{3}, Miki Senda\textsuperscript{3}, Daisuke Takaya\textsuperscript{4}, Teruki Honma\textsuperscript{4}, Toshiya Senda\textsuperscript{3}, Keiji Tanino\textsuperscript{2}, Masanori Hatakeyama\textsuperscript{1}. \textsuperscript{1}Institute of Microbial Chemistry, Tokyo, Japan, \textsuperscript{2}Hokkaido University, Sapporo, Japan, \textsuperscript{3}High Energy Accelerator Research Organization, Tsukuba, Japan, \textsuperscript{4}RIKEN Center for Biosystems Dynamics Research, Yokohama, Japan.

A82 The dual effects of angiogenic and osteogenic differentiation on ADSC were promoted by endothelial cell derived nanovesicles. Jinah Lee\textsuperscript{1}, Hye Seon Kim\textsuperscript{2}, Joo Hyeon Park\textsuperscript{1}, Jung Bok Lee\textsuperscript{1}. \textsuperscript{1}Department of Biological Science, Sookmyung Women’s University, Seoul, Korea, Republic of, \textsuperscript{2}Department of Medical Engineering, Yonsei University College of Medicine, Seoul, Korea, Republic of.

A83 Phase 1, open-label, single dose, ethnobridging study evaluating the safety, tolerability, and pharmacokinetics of lasofoxifene in healthy Japanese and Caucasian women. Stanford Jhee\textsuperscript{1}, David S. Han\textsuperscript{2}, Sophie Lee\textsuperscript{1}, Paul V. Plourde\textsuperscript{3}, Simon Jenkins\textsuperscript{3}, David J. Portman\textsuperscript{3}. \textsuperscript{1}Parexel International, Los Angeles, CA, \textsuperscript{2}Parexel International, Glendale, CA, \textsuperscript{3}Sermonix Pharmaceuticals, Columbus, OH.

A84 Investigation of autonomous phenotypic switch in aggressive cancers. Januka Khanal, Chunxiao Ren, Yansheng Liu, Andre Levchenko. Yale University, New Haven, CT.

A85 Radioprotective effect of mistletoe extract on intestinal toxicity: In vivo study using adult zebrafish. Sunmin Park\textsuperscript{1}, Suhyun Kim\textsuperscript{1}, Soonil Koun\textsuperscript{2}, Hae-Chul Park\textsuperscript{2}, Won Sup Yoon\textsuperscript{1}, Chai Hong Rim\textsuperscript{1}. \textsuperscript{1}Korea University Ansan Hospital, Gyeonggido, Korea, Republic of, \textsuperscript{2}Zebrafish Translational Medical Research Center, Gyeonggido, Korea, Republic of.

A86 SAMHD1 silencing cooperates with radiotherapy to induce anti-tumor immune responses through STING pathway in lung adenocarcinoma. Yan Gong, Yangyi Li, Yajie Cheng, Zhengrong Huang, Conghua Xie. Zhongnan Hospital of Wuhan University, Wuhan, China (Mainland).

A87 A fallopian tube-on-a-chip to study on relationship endometriosis and fallopian tube epithelial cells. Seung Hee Kim, Jung Bok Lee. Sookmyung Women’s University, Seoul, Korea, Republic of.


A89 Multi-pronged computation approach identifies pixantrone as an inhibitor of oncogenic KRAS and a potent radiosensitizer of pancreatic cancer. Wenjin Zhou\textsuperscript{1}, Sunil Krishnan\textsuperscript{2}, Mansoor Ahmed\textsuperscript{3}, Anil Srivastava\textsuperscript{4}, Bhanu Venkatesulu\textsuperscript{5}, Pankaj Singh\textsuperscript{5}, Lakshmi Mahadevan\textsuperscript{5}, Uddhavesh Sonavane\textsuperscript{6}, Vinod Jani\textsuperscript{8}, Mallikarjunachari Uppaladinne\textsuperscript{7}, Rajendra Joshi\textsuperscript{6}, Abhilash Jayaraj\textsuperscript{8}, Vibha Tandon\textsuperscript{9}, Dwarakanath Bilikere\textsuperscript{10}. \textsuperscript{1}University of Massachusetts Lowell, Lowell, MA, \textsuperscript{2}Mayo Clinic, Jacksonville, FL, \textsuperscript{3}National Institutes of Health, Rockville,
A91  Effect of wheat bran bioactive compounds in pancreatic cancer intervention.
Brooke Roeges, Hayle Boechler, Taylor Stegman, Sean Pollack, Michael Kjelland, Khwaja Hossain. Mayville State University, Mayville, ND.

A92  Microbiota in stools can be biomarker that predicts CRT efficacy of ESCC patients. Takuma Sasaki1, Yasunori Matsumoto2, Kentaro Murakami2, Takeshi Toyozumi2, Ryota Otsuka2, Kazuya Kinoshita2, Shinichiro Iida2, Hiroki Morishita2, Hisahiro Matsubara2. 1Chiba University, Department of Frontier Surgery, 千葉市中央区亥鼻1-8-1, Japan, 2Chiba University, Department of Frontier Surgery, 千葉市中央区, Japan.

Cancer Immunotherapy

B01  Targeting chromatin effector Pygo2 to enhance prostate cancer immunotherapy. Yini Zhu1, Yun Zhao1, Jiling Wen1, Sheng Liu2, Tianhe Huang1, Ishita Hatial1, Xiaoxia Peng1, Hawraa Al Janabi1, Gang Huang1, Jackson Mittlesteadt1, Michael Cheng2, Atul Bhardwaj1, Brandon Ashfeld1, Kenneth R. Kao3, Dean Y. Maeda4, Xing Dai5, Olaf Wiest1, Bria Blagg1, Xuemin Lu1, Liang Cheng2, Jun Wan2, Xin Lu1. 1University of Notre Dame, Notre Dame, IN, 2Indiana University School of Medicine, Indianapolis, IN, 3Memorial University, St. John's, Canada, 4Syntrix Biosystems, Inc., Auburn, WA, 5University of California, Irvine, Irvine, CA.

B02  Neoantigen paradox: Neoantigens do not always induce an inflamed tumor microenvironment. Takamasa Ishino1, Shusuke Kawashima2, Etsuko Tanji2, Toshihide Ueno3, Youki Ueda1, Sadahisa Ogasawara3, Kazuhide Sato3, Hiroyuki Mano3, Soichiro Ishihara4, Naoyo Kato4, Masahito Kawazuz4, Yoshuke Togashi1. 1Department of Tumor Microenvironment, Faculty of Medicine, Dentistry and Pharmaceutical Sciences, Okayama University, Okayama, Japan, 2Chiba Cancer Center, Research Institute, Chiba, Japan, 3Division of Cellular Signaling, National Cancer Center Research Institute, Tokyo, Japan, 4Department of Gastroenterology, Graduate School of Medicine, Chiba University, Chiba, Japan, 5Departments of Surgical Oncology, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan.

B04  WEE1 inhibition enhances the antitumor immune response to PD-L1 blockade by the concomitant activation of STING and STAT1 pathways in small cell lung cancer. Triparna Sen. Icahn School of Medicine at Mount Sinai, New York, NY.

B05  Radiation induces NK cell migration and antitumor immune responses in pancreatic carcinoma. Thomas Walle1, Joscha A. Kriske1, Boyu Liao2, Jürgen Debus1, Peter E. Huber2. 1DKFZ, NCT, University Hospital, Heidelberg, Germany, 2DKFZ and University Hospital, Heidelberg, Germany.

B08 BOIN12: Bayesian optimal interval phase 1/2 trial design for utility-based dose optimization. Ruitao Lin. The University of Texas MD Anderson Cancer Center, Houston, TX.

B09 High throughput screening of combinational therapy of hepatocellular carcinoma. Yiming Yang, Peter Lobie. Tsinghua University, Shenzhen, China (Mainland).

B10 Overcoming immunotherapy resistance in heterogeneous MHC-I triple negative breast cancers via NK cell activation. Brandie C. Taylor, Xiaopeng Sun, Paula Gonzalez-Ericsson, Ann Hanna, Elizabeth C. Wescott, Susan R. Opalenik, Justin M. Balko. 1Vanderbilt University, Nashville, TN, 2Northwestern, Chicago, IL.

B11 The Protein-like Polymer (PLP): A tunable proteomimetic nanoplatform for the development of rationally designed cancer vaccines with therapeutic efficacy in multiple tumor models. Max M. Wang, Mi Ran Choi, Brayley Gattis, Bin Zhang, Nathan Gianneschi. 1Northwestern, Evanston, IL.


B14 Early phase II study of mixed 19-peptide vaccine (KRM-19) monotherapy for refractory triple-negative breast cancers. Rie Sugihara, Yuko Takao, Sayaka Sakurai, Yuriko Katagiri, Shuntarou Matsushima, Hiidetaka Watanabe, Hiromi Oku, Yoshito Akagi, Uhi Toh. Department of Surgery, Kurume University School of Medicine, Kurume, Japan.

B15 SUMOylation inhibition transforms tumor immunity from cold to hot and activates antitumor immune cells. Seiji Yano, Hiroshi Kotani. Kanazawa University, Kanazawa, Japan.


B18 FGFR inhibition enhances efficacy of PD-1 blockade in an FGFR3S249C driven model of high grade, non-muscle invasive bladder cancer. Atsushi Okato, Takanobu Utsumi, Michela Ranieri, Xingnan Zheng, Luiza Doro Pereira, Ujjawal Manocha, Chen Ting, Mi Zhou, Jeffrey S. Damrauer, Kwok-Kin Wong, William Y. Kim. 1Lineberger
B19  
**ARID1A deficiency induces adaptive immune resistance and druggable PD-L1 in triple negative breast cancer via NPM1.**  
Xichun Hu\(^1\), Zhonghua Tao\(^1\), Xinyu Chen\(^1\), Bin Li\(^1\), Ye Wang\(^2\), Juan Jin\(^1\), Yu Yang\(^2\), Leihuan Huang\(^2\), Mengdi Yang\(^1\), Jian Zhang\(^1\), Biyun Wang\(^1\), Zhiming Shao\(^1\), Ting Ni\(^2\).  
\(^1\)Fudan University Shanghai Cancer Center, Shanghai, China (Mainland), \(^2\)Fudan University, Shanghai, China (Mainland).

B20  
**PD-L1 expression in various tumor types: A tissue microarray study on 11,838 tumor samples.**  
Katharina Moeller, Madeleine Knoell, Maximilian Lennartz, Niclas Christian Blessin, Sarah Minner, Christoph Fraune, Stefan Steurer, Ronald Simon, Guido Sauter, Till Krech. Institute of Pathology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany.

B21  
**Targeting EZH2 to improve immunotherapy outcomes in lung squamous cell carcinoma.**  
Tanner J. DuCote\(^1\), Xiulong Song\(^1\), Jinpeng Liu\(^1\), Xufeng Qu\(^2\), Jinze Liu\(^2\), Kwok-kin Wong\(^3\), Christine F. Brainson\(^1\).  
\(^1\)University of Kentucky, Lexington, KY, \(^2\)Virginia Commonwealth University, Richmond, VA, \(^3\)New York University, New York, NY.

B22  
**TGF-β2 antisense (OT-101) for the treatment of diffuse midline gliomas (DMG).**  
Vuong Trieu. Oncotelic / SapuBio, Agoura Hills, CA.

B23  
**PD-L1 tumor-intrinsic signaling and its therapeutic implication in triple-negative breast cancer.**  
Kun Ling. Mayo Clinic, Rochester, MN.

B25  
**BAFF CAR-T cell therapy for the treatment of chronic lymphocytic leukemia.**  
Derek P. Wong, Reshmi Parameswaran. Case Western Reserve University School of Medicine, Cleveland, OH.

Epigenetics; Cancer Plasticity and Heterogeneity; RNA Networks

B32  
**The therapeutic potential of the long non-coding RNA Lnc-HLX-2-7 in group 3 medulloblastomas in children.**  
Keisuke Katsushima\(^1\), Bongyong Lee\(^1\), Menglang Yuan\(^1\), Stacie Stapleton\(^2\), George Jallo\(^2\), Sudipta Seal\(^3\), Charles Eberhart\(^1\), Ranjan J. Perera\(^1\).  
\(^1\)Johns Hopkins University School of Medicine, Baltimore, MD, \(^2\)Johns Hopkins All Children's Hospital, St. Petersburg, FL, \(^3\)University of Central Florida, Orlando, FL.

B33  
**Targeting epigenetic regulation in clear cell renal cell carcinoma reveals PRMT1 as a novel target.**  
Joseph Walton\(^1\), Angel S.N. Ng\(^2\), Anthony Apostoli\(^3\), Jalna Meens\(^3\), Christina Karamboulas\(^3\), Julia Dmytryshyn\(^3\), Felipe Ciamponi\(^4\), Panagiotis Prinos\(^5\), Brian Raught\(^3\), Eric
Chen\(^3\), Cheryl Arrowsmith\(^6\), Laurie Ailles\(^7\).
\(^1\)Department of Medical Biophysics, University of Toronto, Toronto, ON, Canada,
\(^2\)Department of Medical Biophysics, University of Toronto, Toronto, ON, Canada,
\(^3\)Princess Margaret Cancer Centre, University Health Network, Toronto, ON, Canada,
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\(^6\)Department of Medical Biophysics, University of Toronto and Princess Margaret Cancer Centre, University Health Network, Toronto, ON, Canada,
\(^7\)Department of Medical Biophysics, University of Toronto and Princess Margaret Cancer Centre, University Health Network, Toronto, ON, Canada.

B34 Elucidation and pharmacological targeting of non-oncogene dependencies in glioblastoma subpopulations. Lorenzo Tomassoni\(^1\), Wenting Zhao\(^1\), Hongxu Ding\(^2\), Nicola Balboni\(^1\), Kenneth Egbuji\(^1\), Pasquaile Laise\(^3\), Mariano J. Alvarez\(^4\), Michael G. Argenziano\(^5\), Julia L. Furnari\(^1\), Matei A. Banu\(^1\), Jeffrey N. Bruce\(^1\), Peter D. Canoll\(^1\), Peter A. Sims\(^1\), Andrea Califano\(^1\).
\(^1\)Columbia University Irving Medical Center, New York, NY,
\(^2\)University of Arizona, Tucson, AZ,
\(^3\)Columbia University Irving Medical Center / DarwinHealth, New York, NY,
\(^4\)DarwinHealth / Columbia University Irving Medical Center, New York, NY,
\(^5\)Columbia University Irving Medical Center / Columbia University Vagelos College of Physicians and Surgeons, New York, NY.

B35 FXYD3 functionally demarcates an ancestral breast cancer stem cell subpopulation with features of drug tolerant persisters. Noriko Gotoh\(^1\), Mengjiao Li\(^2\), Yasuto Takeuchi\(^2\), Daisuke Shiokawa\(^3\), Kang Wang\(^4\), Tetsu Akiyama\(^5\), Dominic C. Voon\(^1\), Hiroshi Asahara\(^6\), Masahiro Nakagawa\(^7\), Shinya Sato\(^8\), Yohei Miyagi\(^8\), Teppei Shimamura\(^9\), Ryuichiro Nakato\(^5\), Yutaka Suzuki\(^10\), Seishi Ogawa\(^7\), Koji Okamoto\(^3\), Theodoros Foukakis\(^4\).
\(^1\)Cancer Research Institute, Kanazawa University, Kanazawa, Japan,
\(^2\)Kanazawa University, Kanazawa, Japan,
\(^3\)National Cancer Center Research Institute, Chuo-ku, Japan,
\(^4\)Karolinska Institute, Stockholm, Sweden,
\(^5\)Institute for Quantitative Biosciences, The University of Tokyo, Bunkyo-ku, Japan,
\(^6\)Tokyo Medical and Dental University, Bunkyo-ku, Japan,
\(^7\)Kyoto University, Kyoto, Japan,
\(^8\)Kanagawa Cancer Center Research Institute, Yokohama, Japan,
\(^9\)Nagoya University, Nagoya, Japan,
\(^10\)Graduate School of Frontier Biosciences, The University of Tokyo, Kashiwa, Japan.

B36 Identifying the UHRF1 domains critical for osteosarcoma metastasis. Daniel I. Martinez, Claudia A. Benavente. University of California, Irvine, Irvine, CA.

B38 Understanding and targeting prostate cancer (PCa) cell heterogeneity and prostate cancer stem cells (PCSCs). Deam G. Tang. Roswell Park Comprehensive Cancer Center, Buffalo, NY.

B39 GATA6 and CK5 stratify the survival of patients with pancreatic cancer undergoing neoadjuvant chemotherapy. Takashi Kokumai\(^1\), Yuko Omori\(^2\), Masaharu Ishida\(^1\), Fumiko Date\(^2\), Hideaki Karasawa\(^1\), Shun Nakayama\(^1\), Daisuke Douchi\(^1\), Takayuki Miura\(^1\), Hideo Ohtsuka\(^1\), Masamichi Mizuma\(^1\), Kei Nakagawa\(^1\), Takanori Morikawa\(^1\), Atsushi Masamune\(^3\), Michiaki Unno\(^1\), Toru Furukawa\(^2\).
\(^1\)Dept. Surgery, Tohoku Univ. Grad. Sch. Med., Sendai, Japan,
\(^2\)Dept. Investigative Pathology, Tohoku Univ. Grad. Sch. Med., Sendai, Japan,
B41  Investigating the roles of LKB1 in lung tumorigenesis. **Kassandra J. Naughton**, Xiulong Song, Christine F. Brainson. University of Kentucky, Lexington, KY.

B42  Identification of genes and their regulatory mechanisms associated with high malignancy of triple-negative breast cancer. **Kazuki Ogikubo**¹, **Jun Nishida**², **Kei Takahashi**³, **Masato Morikawa**⁴, **Shogo Ehata**⁵, **Daizo Koinuma**⁶, **Kohei Miyazono**¹. ¹Department of Applied Pathology, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan, ²Dana-Farber Cancer Institute, Harvard Medical School, Boston, MA, ³Department of Chemistry, University of Alberta, Edmonton, AB, Canada, ⁴Advanced Comprehensive Research Organization, Teikyo University, Tokyo, Japan, ⁵Department of Pathology, Wakayama Medical University, Wakayama, Japan, ⁶Department of Pathology, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan.

B43  Discovery and development of histone deacetylase 3 (HDAC3) and HDAC8 dual selective PROTACs. **Yufeng Xiao**, Seth Hale, Nikkee Awasthee, Xuan Zhang, Zhiguang Huo, Guangrong Zheng, **Daqing Liao**. University of Florida, Gainesville, FL.

B44  Methylome analysis reveals epigenetic alterations in cell cycle regulation and immune modulation in patients with recurrent astrocytoma, IDH-mutant. **Gregory M. Chamberlin**¹, **Simon Khagi**². ¹Duke University Medical Center, Durham, NC, ²Dartmouth Cancer Center, Manchester, NH.

B45  Super-enhancer profiling reveals ThPOK/ZBTB7B as a breast cancer master regulator that restricts cells to a luminal phenotype. **Yizhuo Shen**¹, Denise Munoz², Ignacio E. Schöf³, Camila Arcuschin³, Kamin Kahrizi³, Rosalyn W. Sayaman⁴, Ons Zakraoui², Julie D. Saba², Jen-Yeu Wang⁵, Jean-Philippe Coppé², Laura Van't Veer⁴, Dietmar Kappes⁶. ¹Harvard Medical School, Boston, MA, ²University of California San Francisco, San Francisco, CA, ³Universidad de Buenos Aires, Buenos Aires, Argentina, ⁴University of California San Francisco, San Francisco, CA, ⁵Stanford University, Palo Alto, CA, ⁶Fox Chase Cancer Center, Philadelphia, PA.

B46  Specific roles of FXYD3 positive cancer stem cells in radio-resistance. **Masahiro Yamazaki**¹, Mengjiao Li², Tatsunori Nishimura², Shigeyuki Takamatsu³, Toshifumi Gabata³, Masaya Ueno⁴, Atsushi Hirao⁴, Noriko Gotoh⁵. ¹Division of Cancer Cell Biology, Cancer Research Institute of Kanazawa University, WISE program for Nano-Precision Medicine, Science, and Technology, Department of Radiology, Graduate School of Medicine, Kanazawa University, Kanazawa, Japan, ²Division of Cancer Cell Biology, Cancer Research Institute of Kanazawa University, Kanazawa, Japan, ³Department of Radiology, Graduate School of Medicine, Kanazawa University, Kanazawa, Japan, ⁴Division of Molecular Genetics, Cancer Research Institute, WPI Nano Life Science Institute, Kanazawa University, Kanazawa, Japan, ⁵Division of Cancer Cell Biology, Cancer Research Institute of Kanazawa University, Institute for Frontier Science Initiative, Kanazawa University, Kanazawa, Japan.
**B47**  A new LSD1 inhibitor targeting glioma. Keiko Shinjo¹, Takashi Umehara², Yoshiteru Murofushi¹, Miho Suzuki¹, Yutaka Kondo¹. ¹Nagoya University Graduate School of Medicine, Nagoya, Japan, ²RIKEN Center for Biosystems Dynamics Research, Yokohama, Japan.

**B48**  Synergistic inhibition of KDM5B and SKP2 on prostate cancer malignancy. LaKendria K. Brown, Thanigaivelan Kanagasabai, Guoliang Li, Sherly Celada, Zhenbang Chen. Meharry Medical College, Nashville, TN.

**B49**  Statins inhibit the collaborative metastasis mediated by VHL heterogeneity in clear cell renal cell carcinoma (ccRCC). Moe Ishihara, Lily Wu, Robert D. Damoiseaux, Junhui Hu, Celine Cano-Ruiz. University of California, Los Angeles, Los Angeles, CA.

**B51**  Maintenance of genome integrity by a long noncoding RNA TUG1 in cancer cells. Miho Suzuki, Kenta Iijima, Keiko Shinjo, Yutaka Kondo. Nagoya University Graduate School of Medicine, Nagoya, Japan.

**B52**  Methylation-silencing is frequently observed in oral malignancies regardless of mutations of tumor-related genes. Masanobu Abe¹, Toshikazu Ushijima², Kazuto Hoshi¹. ¹The University of Tokyo, Tokyo, Japan, ²National Cancer Center Research Institute, Tokyo, Japan.

**Preclinical Models; Organoids; Genetic and Transplantation Models**

**B53**  CD38 and LRG1 drive diffuse type gastric cancer progression via tumor stromal remodeling. Yoku Hayakawa. The University of Tokyo, Tokyo, Japan.

**B54**  Head and neck squamous cell carcinoma organoids as a platform for personalized cancer therapy. Youngmin Park. Yonsei University, Seoul, Korea, Republic of.

**B55**  Multi-omic analysis of malignant pleural mesothelioma PDXs reveals pathway alterations and therapeutic targets. Triparna Sen. Icahn School of Medicine at Mount Sinai, New York, NY.

**B56**  Multi-omic profiling of small cell lung cancer patient-derived xenograft models reveals subtype-specific pathway alterations and therapeutic targets. Triparna Sen. Icahn School of Medicine at Mount Sinai, New York, NY.

**B57**  Establishment of a clear cell renal cell carcinoma chick chorioallantoic membrane model to study the tumor fibrotic stroma and test anti-fibrotic therapies. Kelly Harper, Alexis Perreault, Martine Charbonneau, Nadia Ekindi-Ndongo, Claudio Jeldres, Claire M. Dubois. Université de Sherbrooke, Sherbrooke, QC, Canada.
B58 A 3D breast cancer microorganoid-based screening platform for the evaluation of tumor microenvironment-targeted drugs. David Ascheid1, Magdalena Baumann1, Jürgen Pinnecker1, Mike Friedrichs1, Cornelia Medved1, Katherina Hemmen1, Matthias Hirth2, Katrin G. Heinze1, Erik Henke1. 1University of Wuerzburg, Wuerzburg, Germany, 2Technical University Ilmenau, Ilmenau, Germany.

B59 Ptk6 family kinases play a specific role in the maintenance of ileal mucosal homeostasis in the alimentary tract. Ippei Kikuchi, Masanori Hatakeyama. Institute of Microbial Chemistry, Tokyo, Japan.

B60 Establishment of a personalized platform to identify and evaluate novel treatments to improve ovarian cancer patient survival. Aikaterini Skorda1, Marie Lund Bay1, Anna Røssberg Lauridsen1, Wojciech Senkowski2, Krister Wennerberg2, Johanna Hynninen3, Kaisa Huhtinen4, Sampsa Hautaniemi4, Tuula Kallunki1. 1Cancer Invasion and Resistance, Danish Cancer Society Research Center, Copenhagen, Denmark, 2Biotech Research and Innovation Center, University of Copenhagen, Copenhagen, Denmark, 3Department of Obstetrics and Gynecology, Turku University Hospital and University of Turku, Turku, Finland, 4Systems Biology of Drug Resistance in Cancer, Biomedicum and University of Helsinki, Helsinki, Finland.

B61 The development of personalized CAM Avatar model to predict chemotherapeutic drug sensitivity/resistance of gliomas. Martine Charbonneau1, Kelly Harper1, Karine Brochu-Gaudreau1, Alexis Perreault1, Laurent-Olivier Roy1, Fabrice Lucien2, Shulan Tian2, David Fortin1, Claire M. Dubois1. 1Université de Sherbrooke, Sherbrooke, Canada, 2Mayo Clinic, Rochester, MN.

B62 HER2 as a therapeutic target in bladder cancer. Xinran Tang1, Ziyu Chen1, Andrew Mcpherson1, Jasmine Thomas1, Naryan Rustgi1, Carissa Chu1, Sizhi Gao1, John Christin2, Irina Ostrovnaya1, Michael Berger1, Neeman Mohibullah1, Michael Shen2, Sarat Chandarlapaty1, Hikmat Al-Ahmadie1, Gopakumar Iyer1, Kwanghee Kim1, David Solit1. 1MSKCC, New York, NY, 2Columbia University, New York, NY.

B63 Development of a humanized chick embryo model (huCAM) to test cell line-derived tumor xenograft responses to immunotherapy. Karine Brochu-Gaudreau, Martine Charbonneau, Kelly Harper, Nadia Ekindi-Ndongo, Claudio Jeldres, Patrick P. McDonald, Claire M. Dubois. Université de Sherbrooke, Sherbrooke, QC, Canada.

B64 Collagen XVII regulates tumor growth of pancreatic cancer through CXCL10/CXCR3, Wnt, and Hippo signaling pathways. Ryosuke Kashiwagi1, Ryo Funayama2, Shuichi Aoki1, Hideaki Karasawa1, Koetsu Inoue1, Masahiro Iseki1, Takayuki Miura1, Masaharu Ishida1, Hideo Ohtsuka1, Masamichi Mizuma1, Kei Nakagawa1, Takanori Morikawa1, Michiaki Unno1, Keiko Nakayama1. 1Department of Surgery, Graduate School of Medicine, Tohoku University, Sendai, Japan, 2Department of Cell Proliferation, Graduate School of Medicine, Tohoku University, Sendai, Japan, 3Department of Cell Proliferation, ART, Graduate School of Medicine, Tohoku University, Sendai, Japan.

B66 Targeted nanomedicines for GVHD-mediated acute kidney injury. Magdalini Panagiotakopoulou1, Anastasia Kousa1, Stephen Ruiz1, Emma Grabarnik2, Edgar A. Jaimes1, Marcel R. Van Den Brink1, Daniel A. Heller1. 1Memorial Sloan Kettering Cancer Center, New York, NY, 2Frederick National Laboratory for Cancer Research, Frederick, MD.

B67 Identification of therapeutic vulnerabilities by genome-wide CRISPR knockout library screening of colon cancer organoids. Phillip J. Buckhaults1, Sana Khalili1, Carolyn E. Banister1, Prashanth R. Gokare2, Dave Pocalsky2, Kurtis Bachman2. 1University of South Carolina, Columbia, SC, 2Janssen Research and Development, Spring House, PA.

B68 Using lung cancer organoids to model malignant transformation and accurately predict in vivo drug responses. Christine Fillmore Brainson1, Fan Chen2, Tanner J. DuCote3, Kassandra J. Naughton3. 1University of Kentucky, Markey Cancer Center, Lexington, KY, 2University of Kentucky, Sun-Yat Sen Cancer Center, Lexington, KY, 3University of Kentucky, Lexington, KY.

B69 A multiplex organoid avatar drug testing platform for precision medicine. Phillip J. Buckhaults, Shrey Patel, Sana Khalili, Victoria F. Moy, Emma Gray, Sawyer Lyons, Riley Brents, Carolyn E. Banister. University of South Carolina, Columbia, SC.


B74 Characterization of tumor organoids generated from a Lynch syndrome mouse model. Yurong Song1, Travis Kerr1, Chelsea Sanders1, Lisheng Dai1, Shaneen Baxter1, Brandon Somerville1, Sandra Burkett2, Ryan N. Baquier1, Stephanie D. Mellott1, Todd B. Young1, Heidi E. Lawhorn1, Teri M. Plona1, Bingfeng Xu1, Lei Wei2, Qiang Hu3, Song Liu3, Alan Hutson3, Baktiar Karim1, Simone Difilippantonio1, Ligia Pinto1, Matthias Kloor4, Steven M. Lipkin5, Shizuko Sei6, Robert H. Shoemaker6. 1Frederick National Laboratory for Cancer Research, Frederick, MD, 2National Cancer Institute at Frederick, Frederick, MD, 3Roswell Park Comprehensive Cancer Center, Buffalo, NY, 4German Cancer Research Center, Heidelberg, Germany, 5Weill Cornell Medical College, New York, NY, 6Division of Cancer Prevention, National Cancer Institute, Bethesda, MD.

B75 Synthetic lethal approach that targets c-MYC-driven cancers using small molecule compounds. Yohko Yamazaki1, Takefumi Onodera1, Manabu Kawada2, Isao Momose1. 1Institute of Microbial Chemistry (BIKAKEN), Numazu, Shizuoka, Japan, 2Inst. Microbial Chemistry (BIKAKEN), Lab. Oncology, Tokyo, Japan.

B76 Reliable and cost-effective enrichment-based analysis of 5-hydroxymethylcytosine at single-base resolution. Dongin Lee1, Jaywon Lee1, Hwang-Phil Kim2, Taeyou Kim3, Duhee Bang1. 1Yonsei University, Seoul, Korea, Republic of, 2IMBdx, Seoul, Korea, Republic of, 3Seoul National University Hospital & IMBdx, Seoul, Korea, Republic of.

B77 Anti-cancer treatment via reactivation of mitochondrial quality control targeting pathogenic mitochondrial DNA variants. Hiroki Nagase. Juntendo University, Graduate School of Medicine, Tokyo, Japan.

B78 LY6K depletion modulates TGF-β and EGF signaling. Sujeoung Park, Woo Jung Kim. Sookmyung Women's University, Seoul, Korea, Republic of.

B79 Onepot-Seq: capturing single-cell transcriptomes simultaneously in a continuous medium via transient localization of mRNA. Dongju Shin1, Jungwon Choi1, Ji Hyun Lee2, Duhee Bang1. 1Yonsei University, Seoul, Korea, Republic of, 2Kyung Hee University, Seoul, Korea, Republic of.

B80 N-myc and STAT interactor (NMI) as a novel regulator of ferroptosis from oxidative stress in triple-negative breast cancer. Kyung-Min Lee. Seoul National University Hospital, Seoul, Korea, Republic of.
B81  Trifluridine/tipiracil plus irinotecan in advanced, refractory biliary tract cancers: Results from a phase II trial. Amit Mahipal1, Sri Harsha Tella2, Nathan Foster2, Shi Qian2, Nguyen Tran2, Zhaohui Jin2, Wen Wee Ma2, 1Seidman Cancer Center, Case Western Reserve University, Cleveland, OH, 2Mayo Clinic, Rochester, MN.


B85  Is it the time to focus on etiological factors of hepatocellular carcinoma: A glimpse into the future incidence. Sri Harsha Tella, David Hodge, Mikolaj Wieczorek, Amit Mahipal. Mayo Clinic, Rochester, MN.

B86  A high time on focusing the etiological factors of cholangiocarcinoma: A glimpse into the future incidence of cholangiocarcinoma. Anuhya Kommalapati, Sri Harsha Tella, Mikolaj Wieczorek, David Hodge, Amit Mahipal. Mayo Clinic, Rochester, MN.


Cancer Metabolomics

C01  Overexpression of fatty acid synthase upregulates glutamine-fructose-6-phosphate transaminase 1 and increases O-GlcNAc protein glycosylation to promote colorectal cancer growth. James Drury, Mariah Geisen, Courtney Kelson, Piotr Rychahou, Daheng He, Chi Wang, Mark Evers, Yekaterina Zaytseva. University of Kentucky, Lexington, KY.
C02  Integration of global metabolomics and lipidomics for characterization of cholangiocarcinoma. Linsey Jackson, Jennifer Tomlinson, Lewis Roberts, Akhilesh Pandey, Chen Wang, Arjun Athreya, Rory Smoot. Mayo Clinic, Rochester, MN.

C03  Coevolution of the immune system and metabolome defines unique molecular niches in ccRCC tumors. Cerise Tang¹, Minwei Liu¹, Fenshen Kuo², Robert Motzer³, Paul Russo², Jonathan Coleman², Maria I. Carlo³, Martin Voss³, Nikolaus Schultz¹, A. Ari Hakimi², Ed Reznik¹. ¹Computational Oncology, Memorial Sloan Kettering Cancer Center, New York, NY, ²Urology Service, Department of Surgery, Memorial Sloan Kettering Cancer Center, New York, NY, ³Genitourinary Oncology Service, Department of Medicine, Memorial Sloan Kettering Cancer Center, New York, NY.

C05  Human pancreatic cancer cells are vulnerable to inhibition of redox system under nutrient deprivation. Isao Momose¹, Takefumi Onodera¹, Hayamitsu Adachi¹, Yohko Yamazaki¹, Ryuichi Sawa², Shun-ichi Ohba³, Manabu Kawada². ¹Institute of Microbial Chemistry, Numazu, Shizuoka, Japan, ²Institute of Microbial Chemistry, Tokyo, Japan.

C06  Metabolic and inflammatory differences in breast cancer chemotherapeutic response identify targetable pathways. Yuan-yuan Li, Herman L. Freeman III, Susan L. McRitchie, Wimal W. Pathmasiri, Susan J. Sumner, Delisha A. Stewart. Nutrition Research Institute, University of North Carolina at Chapel Hill, Kannapolis, NC.

C07  Computational pharmacogenomic screen identifies drugs that potentiate the anti-breast cancer activity of statins. Jenna E. van Leeuwen¹, Wail Ba-Alawi¹, Emily Branchard¹, Jennifer Cruickshank¹, Wiebe Schormann², Joseph Longo¹, Jennifer Silvester¹, Peter L. Gross³, David W. Andrews², David W. Cescon¹, Benjamin Haibe-Kains¹, Deena M.A. Gendoo⁴, Linda Z. Penn¹. ¹Princess Margaret Cancer Centre, Toronto, ON, Canada, ²Sunnybrook Research Institute, Toronto, ON, Canada, ³McMaster University, Hamilton, ON, Canada, ⁴University of Birmingham, Birmingham, United Kingdom.

C08  Mitochondrial respiratory supercomplex assembly factor COX7RP regulates metabolism leading to growth in cancer cells. Kazuhiko Ikeda¹, Kuniko Horie¹, Satoshi Inoue². ¹Saitama Medical University, Hidaka, Japan, ²Tokyo Metropolitan Institute of Gerontology, Tokyo, Japan.

C09  Cancer-associated fibroblast-derived itaconate in tumor microenvironment promotes tumor growth in cervical cancer. Ryuichi Nakahara¹, Miki Kato¹, Sho Aki¹, Miyuki Nishida¹, Maki Sugaya¹, Rika Tsuchida¹, Teppei Shimamura², Atsushi Enomoto², Tsuyoshi Osawa¹. ¹University of Tokyo, Tokyo, Japan, ²Nagoya University, Nagoya, Japan.
Drug Resistance

C10  The role of LOXL2 induced by glucose metabolism-activated NF-kB in maintaining drug resistance through EMT and cancer stemness in gemcitabine-resistant pancreatic cancer. Yun Sun Lee, Joon Seong Park. Yonsei University, Seoul, Korea, Republic of.


C14  Synergistic effect of caffeine and simvastatin on growth inhibition of neuroblastoma via targeting adenosine receptor. Gia-Buu Tran, Han-Fei Ding. University of Alabama at Birmingham, Birmingham, AL.

C16  Deep characterization of cancer drugs’ mechanism of action by integrating large-scale genetic and drug screens. Sanju Sinha¹, Neelam Sinha², Eytan Ruppin³. ¹National Cancer Institute, NIH, College Park, MD, ²National Institutes of Health, College Park, MD, ³National Cancer Institute, NIH, Bethesda, MD.

C17  The α-trifluoromethyl chalcone, YS71 exerts antitumor effects against androgen-sensitive LNCaP and PC-3-Txr/CxR, DU145-Txr/CxR cells. Takafumi Shimada¹, Hiroshi Kano¹, Kouji Izumi¹, Yohei Saito², Kyoko Nakagawa-Goto², Atsushi Mizokami¹. ¹Department of Integrative Cancer Therapy and Urology, Kanazawa University Graduate School of Medical Science, Kanazawa, Japan, ²School of Pharmaceutical Sciences, College of Medical Pharmaceutical and Health Science, Kanazawa University, Kanazawa, Japan.

C18  Tracking endogenous EGFR localization using CRISPR/Cas9 fluorescent protein tagging. Ryan Hecksel, Andrew Paek, Joyce Schroeder. University of Arizona, Tucson, AZ.


C20  MET kinase inhibitor reverses resistance to entrectinib induced by hepatocyte growth factor in tumors with NTRK1 or ROS1 rearrangements. Yohei Takumi¹, Sachiko Arai², Chiaki Suzuki², Koji Fukuda², Akihiro Nishiyama², Shinji Takeuchi², Hiroki Sato³, Kunio Matsumoto³, Atsushi Osoegawa¹, Kenji Sugio⁴, Seiji Yano². ¹Department of Thoracic and Breast Surgery, Oita University, Faculty of Medicine, Yufu, Oita, Japan, ²Division of Medical Oncology, Cancer Research Institute, Kanazawa University, Kanazawa, Japan, ³Division of Tumor Dynamics and Regulation, Cancer Research Institute, Kanazawa University, Kanazawa,
Japan, 4Department of Thoracic and Breast Surgery, Oita University, Faculty of Medicine, Yufu, Oita, Japan.


C23 Drug resistance against NAMPT inhibition in gliomas is mediated through metabolic switching. Vinay K. Puduvalli, Pratibha Sharma. UT MD Anderson Cancer Center, Houston, TX.

C24 Targeting sorting sexins to treat ErbB dependent breast cancer. Ben Atwell1, Joyce Schroeder1, Cheng-Yu Chen2, William Montfort1. 1University of Arizona, Tucson, AZ, 2Bristol Myers Squibb, Boston, MA.

C26 Delaying emergence of acquired resistance to the third generation EGFR inhibitor, osimertinib, by targeting activation of intrinsic apoptotic pathway through Mcl-1 inhibition. Guangzhi Ma, Yunfu Deng, Karin A. Vallega, Dongsheng Wang, Shi-Yong Sun. Emory University School of Medicine, Atlanta, GA.

C27 Rapid identification of drug resistance mechanisms using microfluidic chips: Doxorubicin and erlotinib cases. Yukyung Jun1, Sanghyuk Lee2. 1Korea Institute of Science and Technology Information, Daejeon, Korea, Republic of, 2Ewha Womans University, Seoul, Korea, Republic of.

C29 The development of GRB2 functional inhibitors for both RAS/MAPK and double stranded DNA damage repair. Zamal Ahmed1, Darin E. Jones2, John A. Tainer3. 1MD Anderson Cancer Center, Houston, TX, 2University of Arkansas Medical School, Little Rock, AR, 3MD Anderson Cancer Center, Houston, TX.

C30 Upregulation of matrix metalloproteinase-3 (MMP-3) promotes cisplatin-resistance in ovarian cancer. Mariela Rivera-Serrano1, Blanca Quiñones-Díaz2, Pablo Vivas-Mejía3. 1University of Puerto Rico Rio Piedras Campus, San Juan, Puerto Rico, 2University of Puerto Rico Medical Sciences Campus, San Juan, Puerto Rico.

C33  A gene expression signature in slow-cycling colon cancer stem cells: Implications for cancer progression and chemoresistance. Daisuke Shiokawa\textsuperscript{1}, Hiroaki Sakai\textsuperscript{2}, Hirokazu Ohata\textsuperscript{2}, Yusuke Kanda\textsuperscript{2}, Hitoshi Nakagama\textsuperscript{1}, Koji Okamoto\textsuperscript{2}. \textsuperscript{1}National Cancer Center, Tokyo, Japan, \textsuperscript{2}Teikyo University, Tokyo, Japan.

C34  Substance P receptor antagonism enhances chemotherapeutic responses in triple negative breast cancer. Prema Robinson\textsuperscript{1}, Viviana Villalobos\textsuperscript{2}, Emma Rodriguez\textsuperscript{1}. \textsuperscript{1}University of Texas MD Anderson Cancer Center, Houston, TX, \textsuperscript{2}Department of Health & Biomedical Sciences, The University of Texas Rio Grande Valley, Brownsville, TX.

Early Detection of Cancer

C36  Prediction of BRCA mutations in women using a joint lasso. James Webber, Kevin Elias. Brigham and Women's Hospital, Boston, MA.

C37  Exploring circulating small RNAs as potential liquid biopsy biomarkers for detecting early-stage breast cancer developing in high-risk benign breast tumors. Mayumi Jijiwa\textsuperscript{1}, Yuanyuan Fu\textsuperscript{1}, Vedbar S. Khadka\textsuperscript{1}, Masaki Nasu\textsuperscript{1}, Ken D. Kobayashi\textsuperscript{1}, Ken Nakatsu\textsuperscript{2}, Matthew Huo\textsuperscript{3}, Youping Deng\textsuperscript{1}. \textsuperscript{1}University of Hawaii at Manoa, Honolulu, HI, \textsuperscript{2}Emory University, Atlanta, GA, \textsuperscript{3}Punahou School, Honolulu, HI.


C39  Mutated proteome analysis of circulating extracellular vesicles enabled sensitive and effective liquid biopsy for renal cell cancer. Yuji Hakozaki\textsuperscript{1}, Yuta Yamada\textsuperscript{2}, Haruki Kume\textsuperscript{2}, Koji Ueda\textsuperscript{1}. \textsuperscript{1}Japanese Foundation for Cancer Research, Tokyo, Japan, \textsuperscript{2}The University of Tokyo, Tokyo, Japan.

C40  The impact of ovarian cancer risk factors on miRNA serum profiles in women without ovarian cancer. Laura Wollborn, James W. Webber, Sudhanshu Mishra, Marta Williams, Chad B. Sussmann, Joyce Wang, Tahireh Markert, Cameron C. Comrie, Daniel G. Packard, Monica K. Moore, Stephanie Alimena, Kevin M. Elias. Brigham and Women's Hospital, Boston, MA.

C41  Clinical significance of autoantibodies to tumor-associated antigens (TAAs) as biomarkers in pancreatic cancer. Xiao Wang, Cuipeng Qiu, Jian-Ying Zhang. The University of Texas at El Paso, El Paso, TX.
C42  Evaluation of circulating miRNA signatures for the early detection of nasopharyngeal carcinoma. Aisling Forder¹, Bradley Coe², Wan Lam¹, Andrew Thamboo³, Cathie Garnis¹. ¹BC Cancer Research Center, Vancouver, BC, Canada, ²BC Children's and Women's Hospital, Vancouver, BC, Canada, ³St. Paul's Sinus Center, Otolaryngology Head and Neck Surgery, Vancouver, BC, Canada.

C43  Novel urinary biomarkers for subclinical detection of early-stage cholangiocarcinoma. Taisuke Baba¹, Masaki Sunagawa¹, Junpei Yamauchi¹, Takashi Mizuno¹, Toshio Kokuryo¹, Hizuru Amano², Shun Kumano³, Takashi Ishigaki³, Akinari Hinoki², Tomoki Ebata¹. ¹Division of Surgical Oncology, Department of Surgery, Nagoya University Graduate School of Medicine, Nagoya, Japan, ²Department of Rare/Intractable Cancer Analysis Research, Nagoya University Graduate School of Medicine, Nagoya, Japan, ³Research & Development Group, Hitachi, Ltd., Tokyo, Japan.

C44  Cervicovaginal protein biomarkers for non-invasive detection of endometrial cancer. Pawel Laniewski¹, Haiyan Cui², Nichole Mahnert³, Jamal Mourad³, Matthew P. Borst³, Lyndsay Willmott¹, Denise Roe², Melissa M. Herbst-Kralovetz¹. ¹University of Arizona, College of Medicine-Phoenix, Phoenix, AZ, ²University of Arizona, Tucson, AZ, ³Research and Development Group, Hitachi, Ltd., Tokyo, Japan.

C45  Cell context-dependent roles of a cell adhesion molecule, CA DM1, in human oncogenesis. Yoshinori Murakami¹, Takeshi It¹, Yutaka Kasai¹, Yumi Tsuboi¹, Mizuki Tominaga¹, Tomoko Masuda¹, Motoi Oba¹, Akihisa Mitani², Goh Tanaka², Takahide Nagase². ¹Division of Molecular Pathology, The Institute of Medical Science, The University of Tokyo, Tokyo, Japan, ²Department of Respiratory Medicine, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan, ³Department of Respiratory Medicine, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan.

C46  Discovery of plasma biomarkers for early detection of colorectal cancer using proximity extension assay. Ayumi Kashiro¹, Yutaka Naito¹, Tadahaya Mizuno², Satoshi Nara³, Susumu Hijioka⁴, Chigusa Morizane⁴, Shingo Kato⁵, Hiroki Ochiai⁶, Keiko Takeuchi⁷, Hiroshi Sato⁷, Yumiko Nomura⁸, Hiroshi Konishi⁹, Kazufumi Honda¹⁰. ¹Institute for Advanced Medical Sciences, Nippon Medical School., Tokyo, Japan, ²Graduate School of Paratheatrical Science, University of Tokyo, Tokyo, Japan, ³Department of Hepatobiliary and Pancreatic Surgery, National Cancer Center Hospital, Tokyo, Japan, ⁴Department of Hepatobiliary and Pancreatic Oncology, National Cancer Center Hospital, Tokyo, Japan, ⁵Department of Clinical Cancer Genomics, Yokohama City University Hospital, Kanagawa, Japan, ⁶Department of Gastroenterological Surgery, Kitasato University Kitasato Institute Hospital, Kanagawa, Japan, ⁷Institute for Advanced Medical Sciences, Nippon Medical School, Tokyo, Japan, ⁸Non-Profit Organization Japan Clinical Research Support Unit, Tokyo, Japan, ⁹Japan Cancer Society, Tokyo, Japan, ¹⁰Department of Bioregulation, Graduate of Medicine, Nippon Medical School, Tokyo, Japan.

C47  Surveillance for second breast cancer events in breast cancer survivors: Review of current evidence and experience of a regional breast service. David Westbroek¹, Ibifunke Pegba-Otemolu², Olayemi Eseagwu³, Khalid Amin⁴, Jennifer Smith⁴. ¹Northern Lincolnshire and
Goole NHS Foundation Trust, Division of Family Services (Breast Unit), Grimsby, United Kingdom, 2Northern Lincolnshire and Goole NHS Foundation Trust, Family Services (Breast Unit), Grimsby, United Kingdom, 3Northern Lincolnshire and Goole NHS Foundation Trust, Department of Medicine, Grimsby, United Kingdom, 4Northern Lincolnshire and Goole NHS Foundation Trust, Family Services, Grimsby, United Kingdom.

Genetic and Environmental Factors in Carcinogenesis

**C48**  Impacts of hereditary breast and ovarian cancer syndrome (HBOC) testing status on surgical treatment for patients with early operable breast cancer. Oku Hiromi1, Sugihara Rie1, Saku Shuko1, Takao Yuku1, Numata Sanae2, Sudou Tomoya2, Toh Uhi1, Akagi Yoshito1. 1Kurume University Department of Surgery, Kurume, Fukuoka, Japan, 2Kurume University Department of Cancer Center, Kurume, Fukuoka, Japan.

**C49**  A novel molecular mechanism for liver carcinogenesis induced by laminin-γ2 monomer. Nobuaki Funahashi1, Hikari Okada2, Motoharu Seiki3, Shuichi Kaneko4, Taro Yamashita5, Naohiko Koshikawa1. 1Department of Life Science and Technology, Tokyo Institute of Technology, Yokohama, Japan, 2Graduate School of Medical Sciences, Kanazawa University, Kanazawa, Japan, 3Institute of Medical Science, University of Tokyo, Minato-ku, Japan, 4Department of Gastroenterology, Kanazawa University Hospital, Kanazawa, Japan.

**C50**  African ancestry influence on the triple negative breast cancer tumor microenvironment from the Duffy-null allele. Rachel Martini1, Millicent Amankwah2, Stevens Patino2, Isra Ellhussein3, Brian Stonaker2, Mumina Sadullozoda2, Julie Sahler4, Avery August4, Rick Kittles5, Clayton Yates3, Nancy Manley6, John Carpten7, Lisa Newman2, Melissa Davis2. 1Weill Cornell Medical College, New York, NY, 2Weill Cornell Medical College, New York, NY, 3Tuskegee University, Tuskegee, AL, 4Cornell University, Ithaca, NY, 5City of Hope, Duarte, CA, 6University of Georgia, Athens, GA, 7University of Southern California, Los Angeles, CA.

**C52**  Tissue specificity of chemical damages on human genome DNA in carcinogenic contexts, an application of DNA adductomics approach. Yuji Iwashita1, Shunsuke Ohitsuka1, Ippei Ohnishi1, Yuto Matsushita1, Takashi Yamashita1, Keisuke Inaba2, Atsuko Fukazawa2, Hideto Ochiai2, Keigo Matsumoto2, Nobuhito Kurono1, Yoshitaka Matsushima3, Hiroki Mori4, Shiko Suzuki2, Shohachi Suzuki2, Fumihiko Tanioka2, Haruhiko Sugimura1. 1Hamamatsu University School of Medicine, Hamamatsu, Japan, 2Iwata City Hospital, Iwata, Japan, 3Tokyo University of Agriculture, Tokyo, Japan, 4Hamamatsu Medical Center, Hamamatsu, Japan.

**C53**  Development-associated PIWI-interacting RNAs are reactivated in lung cancer and have prognostic implications. Michelle E. Pewarchuk1, David E. Cohn1, Nikita Telkar2, Greg L. Stewart1, Brenda C. Minatel1, Wendy P. Robinson2, Wan L. Lam1. 1BC Cancer Research
Institute, Vancouver, BC, Canada, \textsuperscript{2}BC Children's Hospital Research Institute, Vancouver, BC, Canada.


\textbf{C55} Arsenic as a hepatocellular carcinoma risk factor: Potential mechanisms for pro-carcinogenic effects. Mart Dela Cruz, Rohit Kumar, Hemant K. Roy. Baylor College of Medicine, Houston, TX.

\textbf{C56} ERBB4/HER4 drives \textit{BRAF} wild-type melanomas. Lauren M. Lucas, Vipasha Dwivedi, Joelle N. Woggerman, Jessica A. Markham, David J. Riese. Auburn University Harrison College of Pharmacy, Auburn, AL.

\textbf{C57} Six-transmembrane epithelial antigen of prostate 4: An indicator of prognosis and tumor immunity in hepatocellular carcinoma. Song-hee Han, Mi ha Ju. Dong-A University College of Medicine, Busan, Korea, Republic of.

\textbf{C59} Characterization of asymptptomatically infected Epstein–Barr virus strains in Japan: Apparent difference against those in Asian nasopharyngeal carcinoma-endemic areas. Misako Yajima\textsuperscript{1}, Atsushi Toyoda\textsuperscript{2}, Kazufumi Ikuta\textsuperscript{3}, Nobuo Ohta\textsuperscript{4}, Kazuhiro Murakami\textsuperscript{5}, Teru Kanda\textsuperscript{3}. \textsuperscript{1}National Research Center for the Control and Prevention of Infectious Diseases, Nagasaki University, Nagasaki, Japan, \textsuperscript{2}Comparative Genomics Laboratory, National Institute of Genetics, Mishima, Japan, \textsuperscript{3}Division of Microbiology, Faculty of Medicine, Tohoku Medical and Pharmaceutical University, Sendai, Japan, \textsuperscript{4}Division of Otolaryngology, Faculty of Medicine, Tohoku Medical and Pharmaceutical University, Sendai, Japan, \textsuperscript{5}Division of Pathology, Faculty of Medicine, Tohoku Medical and Pharmaceutical University, Sendai, Japan.

\textbf{C60} The effects of \textit{Alcohol dehydrogenase 1B} polymorphism for colorectal cancer risk using mediation analysis. Yoshiki Ohno, Yuriko N. Koyanagi, Isao Oze, Yukari Taniyama, Yumiko Kasugai, Yukino Kawakatsu, Hidemi Ito, Keitaro Matsuo. Aichi Cancer Center, Nagoya, Japan.
Genome Instability

C61 Depleting UBE3B enhances PARP inhibitor sensitivity by disturbing proteasomal degradation in DSB repair. Maiko Okada1, Ai Horio1, Oki Kurata1, Ibuki Kato1, Hiroyuki Nishikawa2, Ryotaro Nishi1, Kazuyoshi Yano1. 1School of Bioscience and Biotechnology, Tokyo University of Technology, Tokyo, Japan, 2Institute of Medical Science, St. Marianna University Graduate School of Medicine, Kanagawa, Japan.

C62 Chromosomal re-arrangements as drivers of cellular immortalization and cancer evolution. Devi Dheekshita Nelakurti1, Ruben C. Petreaca2, Golrokh Mirzaei3. 1The Ohio State University, Columbus, OH, 2The Ohio State University James Comprehensive Cancer Center, Columbus, OH, 3The Ohio State University at Marion, Marion, OH.

C63 Therapeutic disruption of RAD52-DNA complexation via novel drug-like inhibitors for the treatment of BRCA deficient cancers. Divya S. Bhat1, Eva Malacara2, Ludovica Di Biagi2, Mortezaali Razzaghi1, Masayoshi Honda1, Kathryn Hobbs1, Sarah Hegel3, Pietro Pichierrri2, Michael Ashley Spies1, Maria Spies1. 1University of Iowa, Iowa City, IA, 2Istituto Superiore di Sanità, Rome, Italy, 3University of Pittsburgh, Pittsburgh, PA.

C64 Chromatin remodeling factors facilitate accurate DNA double strand break repair. Abdulaziz B. Hamid1, Kimberly Hardison2, Renee A. Bouley2, Ruben C. Petreaca2. 1Medical College, Wisconsin, Milwaukee, WI, 2The Ohio State University, Marion, OH.

C65 Phosphorylation by Abl1 mediates MLH1 regulation. Hannah G. Daniels1, Eva M. Goellner1, Ana Thompson2, Kristin Miller1, Breanna Knicely1. 1University of Kentucky, Lexington, KY, 2Berea College, Berea, KY.

C66 The Helicobacter pylori CagA oncoprotein inhibits DNA damage-induced apoptosis through Hippo signal activation. Naoko Kamiya1, Takuya Ooki2, Masanori Hatakeyama2. 1Hokkaido University, Sapporo, Japan, 2Institute of Microbial Chemistry, Tokyo, Japan.

C67 Chromosome-level variations shape the malignant phenotypes in gastric tumors. Minji Jo1, Tetsuya Negoto1, Izuma Nakayama2, Kengo Takeuchi1, Hiroshi Kawachi1, Toru Hirot1. 1The Cancer Institute Japanese Foundation for Cancer Research, Tokyo, Japan, 2The Cancer Institute Hospital Japanese Foundation for Cancer Research, Tokyo, Japan.

C69 Uncovering cross-talk amongst the cellular DNA damage response (DDR) and B-cell receptor (BCR) signalling pathways reveals novel therapeutic strategies to counteract refractory chronic lymphocytic leukemia (CLL). Sara Kost1, Ali Saleh1, Shek Hei Yuan1, Bozena Kuzio1, Versha Banerji1, Spencer Gibson2, Lin Yang1, James Johnston1, Sachin Katyal3. 1CancerCare Manitoba, Winnipeg, MB, Canada, 2University of Alberta, Edmonton, AB, Canada, 3CancerCare Manitoba and University of Manitoba, Winnipeg, MB, Canada.
New Technologies for Cancer Imaging and Other Emerging Technologies

C71  Heterofunctional polYmeric DegRAding Chimeras (HYDRACs): A novel class of compounds capable of targeted protein degradation. Max M. Wang¹, Mihai Truica², Brayley Gattis¹, Sarki Abdulkadir², Nathan Gianneschi¹. ¹Northwestern, Evanston, IL, ²Northwestern, Chicago, IL.

C72  Targeted nanoelectroporation of cancer cells using adjustable magnetoelectric nanoparticles. Max Shotbolt¹, Elric Zhang¹, Skye Conlan¹, Ping Liang², Sakhrat Khizroev¹. ¹University of Miami, Miami, FL, ²Cellular Nanomed, Irvine, CA.


C75  Decoding the spatial landscape of regulatory gene interactions in cancer with deep learning and spatial transcriptomics. Demeter Túrós¹, Alberto Valdeolivas², Sven Rottenberg¹. ¹University of Bern, Bern, Switzerland, ²Roche Innovation Center Basel, Basel, Switzerland.

C76  Whole body imaging of cancer model Medaka using a wide field light-sheet microscopy. Takeshi Immaura. Ehime University Graduate School of Medicine, Toon, Japan.

C77  An interactive R Shiny app for systematically integrating genetic and pharmacologic cancer dependency maps. Li-Ju Wang¹, Yidong Chen², Yu-Chiao Chiu¹. ¹University of Pittsburgh Hillman Cancer Center, Pittsburgh, PA, ²University of Texas Health San Antonio, San Antonio, TX.

C78  Automated prognosis marker assessment in 10,234 prostate cancers using artificial intelligence and BLEACH&STAIN multiplex fluorescence immunohistochemistry. Tim Mandelkow¹, Gisa Mehring², Elena Bady¹, Maximilian Lennartz¹, Frank Jacobsen¹, Doris Höflmayer¹, Sarah Minner¹, Eike Burandt¹, Guido Sauter¹, Markus Graefen², Niclas C. Blessin¹. ¹Institute of Pathology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany, ²Martini-Clinic, University Medical Center Hamburg-Eppendorf, Hamburg, Germany.

C79  Analysis of cancer stem cells with invasive capacity by Hydrogel-Activated Reprogramming (HARP) phenomenon using PNASS hydrogel. Masumi Tsuda¹, Jun Suzuka², Yoshitaka Oda¹, Lei Wang¹, Yusuke Saito¹, Jian Ping Gong³, Shinya Tanaka¹. ¹Faculty of Medicine, Hokkaido University, Sapporo, Japan, ²NEXT-Ganken program, Japanese Foundation for Cancer Research, Tokyo, Japan, ³Faculty of Advanced Life Science, Hokkaido University, Sapporo, Japan.
C80 Development of gilteritinib-based chimeric small molecules that potently induce degradation of FLT3-ITD protein. Nobumichi Ohoka1, Masanori Suzuki2, Takuya Uchida2, Genichiro Tsuji1, Yoshinori Tsukumo1, Masayuki Yoshida2, Takao Inoue1, Yosuke Demizu1, Hitoshi Ohki2, Mikihiro Naito3. 1National Institute of Health Sciences, Kawasaki, Japan, 2Daiichi Sankyo Co., Ltd., Tokyo, Japan, 3The University of Tokyo, Tokyo, Japan.

C81 Lineage-restricted DNA-base editing using polymer-based nanoplexes for high-grade serous ovarian cancer treatment. Chaebin Lee1, Akshaya Chandrasekaran1, Mariam Ahmed1, Nicole Holub1, Moshe Beiser1, Kathleen Hasselblatt1, Wade Wang2, Paula T. Hammond2, Kevin M. Elias1. 1Brigham and Women's Hospital, Boston, MA, 2Massachusetts Institute of Technology, Cambridge, MA.

C82 Versatile tumor-targeted nanoparticles facilitate nucleus/cytoplasm-directed delivery of oxaliplatin and miRNA against head and neck cancer. Yu-Li Lo, Wei-Hsuan Tseng. National Yang Ming Chiao Tung University, Yang-Ming Campus, Taipei, Taiwan (Greater China).

Other


C85 Comparison of combo treatments of human melanoma cell lines (BLM, 1205Lu, WM238) with curcumin, vitamins, and steroids. Pandurangan Ramaraj. KCOM/A.T. Still University, Kirksville, MO.


C87 Debulking status association with ovarian cancer survival by BMI status among Black women. Hannah B. Mandle, Courtney E. Johnson, Joellen M. Schildkraut. Emory Rollins School of Public Health, Atlanta, GA.

C88 Validation of a pre-diagnosis inflammation-related risk score in Black women with epithelial ovarian cancer. Courtney E. Johnson, Hannah B. Mandle, Joellen M. Schildkraut. Emory University, Atlanta, GA.
C89  Altered androgen biosynthesis and enhanced androgen receptor signaling in African American men with localized, therapy-naïve prostate cancer. Swathi Ramakrishnan1, Eduardo Cortes-Gomez1, Rick Kittles2, Jianmin Wang1, Kristopher Attwood1, Anna Woloszynska1.1 Roswell Park Comprehensive Cancer Center, Buffalo, NY, 2 City of Hope Comprehensive Cancer Center, Duarte, CA.

C90  A new genetic architecture of alcohol consumption identified by a genotype-stratified GWAS, and impact on esophageal cancer risk. Yuriko N. Koyanagi1, Masahiro Nakatochi2, Isao Oze1, Hadrien Charvat3, Shinichi Namba4, Akira Narita5, Takahisa Kawaguchi6, Hiroaki Ikezaki7, Asahi Hishida2, Megumi Hara8, Toshiro Takezaki9, Teruhide Koyama10, Yohko Nakamura11, Sadao Suzuki12, Sakurako Katsuura-Kamano13, Kiyonori Kuriki14, Yasuyuki Nakamura15, Kenji Takeuchi5, Atsushi Hozawa5, Kengo Kinoshita5, Yoichi Sutoh2, Kozo Tanno16, Atsushi Shimizu17, Hidemi Ito1, Yumiko Kasugai1, Yukino Kawakatsu1, Yukari Taniyama1, Masahiro Tajika1, Yasuhiro Shimizu1, Etsuji Suzuki18, Yasuyuki Hosono18, Issei Imoto1, Yasuharu Tabara19, Meiko Takahashi6, Kazuya Setoh19, Koichi Matsuda20, Shiori Nakano21, Atsushi Goto22, Ryoko Katagiri21, Taiki Yamaji21, Norie Sawada21, Shoichiro Tsugane21, Kenji Wakai2, Masayuki Yamamoto5, Makoto Sasaki17, Fumihiro Matsuda6, Yukinori Okada4, Motoki Iwasaki21, Paul Brennan23, Keitaro Matsuo1.1 Aichi Cancer Center, Nagoya, Japan, 2 Nagoya University, Nagoya, Japan, 3 Juntendo University, Tokyo, Japan, 4 Osaka University, Osaka, Japan, 5 Tohoku University, Sendai, Japan, 6 Kyoto University, Kyoto, Japan, 7 Kyushu University, Fukuoka, Japan, 8 Saga University, Saga, Japan, 9 Kagoshima University, Kagoshima, Japan, 10 Kyoto Prefectural University of Medicine, Kyoto, Japan, 11 Chiba Cancer Center, Chiba, Japan, 12 Nagoya City University Graduate School of Medical Sciences, Nagoya, Japan, 13 Tokushima University Graduate School of Biomedical Sciences, Tokushima, Japan, 14 University of Shizuoka, Shizuoka, Japan, 15 Shiga University of Medical Science, Ohtsu, Japan, 16 Iwate Medical University, Morioka, Japan, 17 Iwate Medical University, Morioka, Japan, 18 Okayama University, Okayama, Japan, 19 Shizuoka Graduate University of Public Health, Shizuoka, Japan, 20 Tokyo University, Tokyo, Japan, 21 National Cancer Center, Tokyo, Japan, 22 Yokohama City University, Yokohama, Japan, 23 International Agency for Research on Cancer, Lyon, France.

C91  The mechanism of mitochondrial dynamics regulation via PPI. Sho Aki1, Maki Sugaya1, Ryuichi Nakahara1, Keisuke Maeda1, Sumire Nakagawa1, Rika Tsuchida1, Yusuke Hirabayashi2, Masahiro Morita3, Tsuyoshi Osawa1.1 Division of Integrative Nutriomics and Oncology RCAST, The University of Tokyo, Tokyo, Japan, 2 Department of Chemistry and Biotechnology, School of Engineering, The University of Tokyo, Tokyo, Japan, 3 University of Texas Health Science Center, San Antonio, TX.