

**12<sup>th</sup> AACR-JCA Joint Conference**  
**Breakthroughs in Cancer Research: Translating Knowledge into Practice**  
**December 10-14, 2022, Maui, HI, USA**

**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

**A01 The AP-1 transcription factor component, JunB, is required for HPV-associated head and neck cancer.** Hina Rehmani, Natalia Issaeva, Wendell G. Yarbrough. University of North Carolina at Chapel Hill, Chapel Hill, NC.

**A02 Clonal evolution in systemically untreated cancer: The natural history of metastases.** Stephanie Kavan<sup>1</sup>, Lars vB Andersen<sup>2</sup>, Martin J. Larsen<sup>2</sup>, Marianne Vogsen<sup>2</sup>, Malene G. Hildebrandt<sup>2</sup>, Marianne Ewertz<sup>2</sup>, Anne Marie Bak Jylling<sup>2</sup>, Torben A. Kruse<sup>2</sup>, Mads Thomassen<sup>2</sup>. <sup>1</sup>Odense University Hospital, Odense C, Denmark, <sup>2</sup>Odense University Hospital, Odense, Denmark.

**A03 Single-cell transcriptomic analysis of prognostic and predictive matrisome genes in non-small cell lung cancer.** Karolina Prazanowska, Su Bin Lim. Ajou University School of Medicine, Suwon, Korea, Republic of.

**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 Onerup<sup>1</sup>, Agnes af Geijerstam<sup>2</sup>, Elin Ekblom-Bak<sup>3</sup>, Hans-Georg Kuhn<sup>4</sup>, Kirsten Mehlig<sup>2</sup>, Lauren Lissner<sup>2</sup>, Maria Åberg<sup>2</sup>, Mats Börjesson<sup>5</sup>. <sup>1</sup>Department of Pediatrics, Institute of Clinical Sciences, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden, <sup>2</sup>School of Public Health and Community Medicine, Institute of Medicine, University of Gothenburg, Gothenburg, Sweden, <sup>3</sup>Department of Physical Activity and Health, The Swedish School of Sport and Health Sciences, Stockholm, Sweden, <sup>4</sup>Department of Clinical Neuroscience, Institute of Neuroscience and Physiology, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden, <sup>5</sup>Department 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 Rasheed<sup>1</sup>, Ruben Petreaca<sup>2</sup>, Renee Bouley<sup>2</sup>, Ryan Yoder<sup>2</sup>. <sup>1</sup>The Ohio State University, Columbus, OH, <sup>2</sup>The 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/EBP $\alpha$  in B cells functionally inhibits MEF2 family transcription factors: A possible mechanism of leukemia development by CEBP-IGH.** Koya Odaira<sup>1</sup>, Takahiko Yasuda<sup>2</sup>, Kentaro Okada<sup>1</sup>, Takuya Shimooka<sup>1</sup>, Yukino Kojima<sup>1</sup>, Mina Noura<sup>1</sup>, Shogo Tamura<sup>1</sup>, Shingo Kurahashi<sup>3</sup>, Eisuke Iwamoto<sup>2</sup>, Masashi Sanada<sup>2</sup>, Tetsuhito Kojima<sup>4</sup>, Shinobu Tsuzuki<sup>5</sup>, Fumihiko Hayakawa<sup>1</sup>. <sup>1</sup>Nagoya University Graduate School of Medicine, Nagoya, Japan, <sup>2</sup>National Hospital Organization Nagoya Medical Center, Nagoya, Japan, <sup>3</sup>Toyohashi Municipal Hospital, Toyohashi, Japan, <sup>4</sup>Nagoya University Graduate School of Medicine, Aichi Health Promotion Foundation, Nagoya, Japan, <sup>5</sup>Aichi 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 Ohashi<sup>1</sup>, Mayumi Yoshimori<sup>2</sup>, Miwako Nishio<sup>2</sup>, Kaoru Koike<sup>2</sup>, Norio Shimizu<sup>2</sup>, Kazuo Yudo<sup>1</sup>, Morito Kurata<sup>2</sup>, Ayako Arai<sup>1</sup>. <sup>1</sup>St. Marianna University School of Medicine, Kawasaki, Japan, <sup>2</sup>Tokyo 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.

**A16 Investigation of somatic mutational profile and tumor evolution along sequential lymph nodes metastasis using multi-regional whole exome sequencing in oropharyngeal cancer.** Young Min Park. Yonsei University, Seoul, Korea, Republic of.

**A17 Genomic evolution of pancreatic cancer at single-cell resolution.** Haochen Zhang<sup>1</sup>, Palash Sashittal<sup>2</sup>, Elias-Ramzey Karnoub<sup>1</sup>, Benjamin J. Raphael<sup>2</sup>, Christine A. Iacobuzio-Donahue<sup>1</sup>. <sup>1</sup>Memorial Sloan Kettering Cancer Center, New York, NY, <sup>2</sup>Princeton University, Princeton, NJ.

**A18 Mutation and co-mutation landscape of *ERBB2* altered advanced NSCLC.** Lingzhi Hong<sup>1</sup>, Leylah M Drusbosky<sup>2</sup>, Yinyi Wang<sup>3</sup>, Yuanyuan Xiong<sup>4</sup>, Rongrong Chen<sup>4</sup>, Simon Heeke<sup>5</sup>, Monique Nilsson<sup>5</sup>, John V Heymach<sup>5</sup>, Xiuning Le<sup>5</sup>. <sup>1</sup>Department of Imaging Physics, The University of Texas MD Anderson Cancer Center, Houston, TX, <sup>2</sup>Guardant Health, Inc., Redwood City, CA, <sup>3</sup>4 Peking Union Medical College Hospital, Beijing, China (Mainland), <sup>4</sup>Geneplus-Beijing Institute, Beijing, China (Mainland), <sup>5</sup>Department 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. Shen<sup>1</sup>, Yongsheng Bai<sup>2</sup>. <sup>1</sup>Jordan High School, Katy, TX, <sup>2</sup>Eastern 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-Yalcin<sup>1</sup>, Nina Blazeska<sup>1</sup>, Hannah Carter<sup>2</sup>, Morten Nielsen<sup>3</sup>, Stephen Schoenberger<sup>4</sup>, Alessandro Sette<sup>4</sup>, Bjoern Peters<sup>4</sup>. <sup>1</sup>La Jolla Institute for Immunology, La Jolla, CA, <sup>2</sup>University of California San Diego, La Jolla, CA, <sup>3</sup>The Technical University of Denmark, Lyngby, Denmark, <sup>4</sup>La Jolla Institute for Immunology, La Jolla, CA.

**A27 RNA demethylase ALKBH5 supports osteosarcoma growth and progression by inhibiting anti-tumor immunity.** Daisy Medina, Panneerdoss Subbarayalu, Santosh Timilsina, Prabhakar Pitta, Manjeet Rao. UT Health San Antonio, San Antonio, TX.

**A28 Distinct genetic requirements and morphological features of antibody- and phosphatidylserine-mediated phagocytosis.** Daan Vorselen<sup>1</sup>, Roarke A. Kamber<sup>2</sup>, Ramon L.D. Labitigan<sup>2</sup>, Aaron P. Van Loon<sup>3</sup>, Eric Peterman<sup>3</sup>, Melissa Delgado<sup>3</sup>, Jeffrey Rasmussen<sup>3</sup>, Michael C. Bassik<sup>2</sup>, Julie A. Theriot<sup>3</sup>. <sup>1</sup>Wageningen University & Research, Wageningen, Netherlands, <sup>2</sup>Stanford University, Stanford, CA, <sup>3</sup>University of Washington, Seattle, WA.

**A29 Prognostic impact of immune cells and their spatial interplay in urothelial cancer using BLEACH&STAIN.** Nicolaus F. Debatin<sup>1</sup>, Elena Bady<sup>1</sup>, Tim Mandelkow<sup>1</sup>, Zhihao Huang<sup>1</sup>, Henning Plage<sup>2</sup>, Maximilian Lennartz<sup>1</sup>, Guido Sauter<sup>1</sup>, Henrik Zecha<sup>3</sup>, Thorsten Schlomm<sup>2</sup>, Niclas Blessin<sup>1</sup>. <sup>1</sup>Institute of Pathology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany, <sup>2</sup>Department of Urology, Charité Berlin, Berlin, Germany, <sup>3</sup>Department 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. Debatin, 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 Gay<sup>1</sup>, Jack Drda<sup>2</sup>, Wenqiang Chen<sup>1</sup>, Narayan Shivapurkar<sup>1</sup>, Jill Smith<sup>1</sup>. <sup>1</sup>Georgetown University, Washington, DC, <sup>2</sup>Dickinson College, Carlisle, PA.

**A33 Calreticulin is induced by anticancer drugs in colorectal cancer cell lines and organoids.** Satoru Naito<sup>1</sup>, Taiki Kajiwar<sup>1</sup>, Hideaki Karasawa<sup>1</sup>, Minoru Kobayashi<sup>1</sup>, Ono Tomoyuki<sup>1</sup>, Ryo Funayama<sup>2</sup>, Keiko Nakayama<sup>3</sup>, Shinobu Ohnuma<sup>1</sup>, Michiaki Unno<sup>1</sup>. <sup>1</sup>Department of Surgery, Graduate School of Medicine, Tohoku University, Sendai, Japan, <sup>2</sup>Department of Cell Proliferation, Graduate School of Medicine, Tohoku University, Sendai, Japan, <sup>3</sup>Department 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 Ushijima<sup>1</sup>, Satoshi Yamashita<sup>2</sup>, Hideyuki Takeshima<sup>1</sup>, Takahiro Ebata<sup>1</sup>, Yumi Furuichi<sup>1</sup>. <sup>1</sup>Hoshi University, Tokyo, Japan, <sup>2</sup>Maebashi Institute of Technology, Maebashi, Japan.

## Tumor Microenvironment

**A35 Analysis of MRP4 and PGE2 EP4 function in ovarian cancer.** Jocelyn C. Reader<sup>1</sup>, Mc Millan N. Ching<sup>2</sup>, Cong Ava Fan<sup>3</sup>, Mercy Amofa<sup>1</sup>, Leo Chan<sup>4</sup>, Teklu Legesse<sup>5</sup>, Paul Staats<sup>5</sup>, Olga Goloubeva<sup>5</sup>, Fuhua Xu<sup>5</sup>, Amy Fulton<sup>5</sup>, Dana M. Roque<sup>5</sup>, Gautam G. Rao<sup>5</sup>. <sup>1</sup>University of Maryland Eastern Shore, Princess Anne, MD, <sup>2</sup>Johns Hopkins University, Baltimore, MD, <sup>3</sup>Cleveland Clinic Lerner College of Medicine, Cleveland, OH, <sup>4</sup>Perkin Elmer, Lawrence, MA, <sup>5</sup>University of Maryland School of Medicine, Baltimore, MD.

**A36 Utilizing deep learning technology to streamline development of next generation of hypoxic tumor radiosensitizers.** Martin Benej<sup>1</sup>, Mark Mitton-Fry<sup>1</sup>, Ben Haines<sup>1</sup>, Stephen S. MacKinnon<sup>2</sup>, Ioanna Papandreou<sup>1</sup>, Nicholas C. Denko<sup>1</sup>. <sup>1</sup>The Ohio State University, Columbus, OH, <sup>2</sup>Cyclica 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 Qu<sup>1</sup>, Siqi Cao<sup>1</sup>, Griffin G. Hartmann<sup>1</sup>, Wojciech P. Michno<sup>1</sup>, Alyssa Puno<sup>1</sup>, Alexandros P. Drinas<sup>1</sup>, Chioma Madubata<sup>1</sup>, Jun Kim<sup>1</sup>, Maria P. Pages<sup>2</sup>, Kathryn Simpson<sup>2</sup>, Debadrita Bhattacharya<sup>1</sup>, Angua Toland<sup>1</sup>, Christina S. Kong<sup>1</sup>, Caroline Dive<sup>2</sup>, Monte M. Winslow<sup>1</sup>, Anca Pasca<sup>1</sup>, Julien Sage<sup>1</sup>. <sup>1</sup>Stanford University, Stanford, CA, <sup>2</sup>University of Manchester, Manchester, United Kingdom.

**A39 Oxygen sensing BACH1 regulates hypoxic chromatin remodeling in triple negative breast cancer.** Long Chi Nguyen<sup>1</sup>, Christopher Dann<sup>2</sup>, Dongbo Yang<sup>1</sup>, Emily Shi<sup>1</sup>, Thomas Li<sup>1</sup>, Andrea Valdespino<sup>3</sup>, Raven Waston<sup>1</sup>, Lydia Robinson-Mailman<sup>1</sup>, Wenchao Liu<sup>1</sup>, Leticia Stock<sup>1</sup>, Joseph Wynne<sup>4</sup>, Mitsuyo Matsumoto<sup>5</sup>, Kazuhiko Igarashi<sup>5</sup>, Marsha Rich Rosner<sup>1</sup>. <sup>1</sup>University of Chicago, Chicago, IL, <sup>2</sup>University of California, Los Angeles, Los Angeles, CA, <sup>3</sup>University of Pennsylvania, Philadelphia, PA, <sup>4</sup>Food and Drug Administration, Washington D.C., <sup>5</sup>Tohoku University Graduate School of Medicine, Sendai, Japan.

**A40 Anti-PD-1 therapy reduces tumor hypoxia: Evaluation with pimonidazole and [<sup>18</sup>F]fluoromisonidazole as hypoxia probes.** Kohei Nakajima<sup>1</sup>, Mitsunori Homma<sup>1</sup>, Motofumi Suzuki<sup>1</sup>, Yuta Yokouchi<sup>1</sup>, Takuma Matsuda<sup>1</sup>, Hideo Takakura<sup>1</sup>, Kenji Hirata<sup>2</sup>, Yuji Kuge<sup>3</sup>, Mikako Ogawa<sup>1</sup>. <sup>1</sup>Graduate School of Pharmaceutical Sciences, Hokkaido University, Sapporo, Japan, <sup>2</sup>Graduate School of Medicine, Hokkaido University, Sapporo, Japan, <sup>3</sup>Central 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 Yoshida<sup>1</sup>, Tomokazu Ohishi<sup>1</sup>, Hikaru Abe<sup>1</sup>, Shun-ichi Ohba<sup>2</sup>, Hiroyuki Inoue<sup>2</sup>, Ihomi Usami<sup>2</sup>, Masahide Amemiya<sup>1</sup>, Raphael Oriez<sup>1</sup>, Takumi Watanabe<sup>1</sup>, Takao Shimizu<sup>1</sup>, Masakatsu Shibasaki<sup>1</sup>, Manabu Kawada<sup>1</sup>. <sup>1</sup>Institute of Microbial Chemistry (BIKAKEN), Tokyo, Japan, <sup>2</sup>Institute of Microbial Chemistry (BIKAKEN), Shizuoka, Japan.

**A42 FGFR2 as a potential therapeutic target for prevention of cutaneous squamous cell carcinoma.** Megha Thakur<sup>1</sup>, Okkyung Rho<sup>1</sup>, Alok Khandelwal<sup>2</sup>, Steve Carbajal<sup>1</sup>, Cherie-Ann O. Nathan<sup>2</sup>, John DiGiovanni<sup>1</sup>. <sup>1</sup>The University of Texas at Austin, Austin, TX, <sup>2</sup>Louisiana 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.

**A45 Predictive value of neutrophil-to-lymphocyte ratio (NLR) for primary tumor surgery in patients with de novo stage IV breast cancer.** Rie Sugihara, Uhi Toh, Hidetaka Watanabe, Shuntarou Matsushima, Yuriko Katagiri, Shuko Saku, Yuko Takao, Sayaka Sakurai, Yoshito Akagi. Kurume University Department of Surgery, Kurume, Fukuoka, Japan.

**A46 Isolated tumor vessel endothelial cells from human colon cancer exhibit long-term transcriptional memory reflecting the tumor microenvironment.** Michael Stürzl<sup>1</sup>, Maximilian Fuchs<sup>1</sup>, Charles G. Anchang<sup>1</sup>, Richard Demmler<sup>2</sup>, Arif B. Ekici<sup>2</sup>, Carol I. Geppert<sup>2</sup>, Claudia Günther<sup>2</sup>, Susanne Merkel<sup>2</sup>, Vera S. Schellerer<sup>2</sup>, Elisabeth Naschberger<sup>2</sup>. <sup>1</sup>Division of Molecular and Experimental Surgery, Translational Research Center, Universitätsklinikum Erlangen, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Erlangen, Germany, <sup>2</sup>Division 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.

**A48 GPR84: A potential target and prognosis biomarker for clear cell renal cell carcinoma?** Alexis Perreault, Karine Brochu-Gaudreau, Kelly Harper, Martine Charbonneau, Nadia Ekindi-Ndongo, Claudio Jeldres, Claire M. Dubois. Université de Sherbrooke, Sherbrooke, QC, Canada.

**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<sup>1</sup>, Sejin Chung<sup>2</sup>, Angelica E. Rock<sup>1</sup>, Shira R. Okhovat<sup>3</sup>, TaeGyu Oh<sup>3</sup>, Kristina L. Peck<sup>3</sup>, Susan M. Kaech<sup>3</sup>, Dannielle D. Engle<sup>3</sup>. <sup>1</sup>University of California, San Diego; Salk Institute, La Jolla, CA, <sup>2</sup>Lustgarten Foundation, San Diego, CA, <sup>3</sup>Salk Institute, La Jolla, CA.

**A51 Mitochondrial hyperactivation is a targetable signature of prostate cancer bone metastases.** Shang Su<sup>1</sup>, Ke Liu<sup>2</sup>, Jing Xing<sup>2</sup>, Yawei Zhao<sup>1</sup>, Ruihua Liu<sup>1</sup>, Bin Chen<sup>2</sup>, Xiaohong Li<sup>1</sup>. <sup>1</sup>The University of Toledo, Toledo, OH, <sup>2</sup>Michigan State University, Grand Rapids, MI.

**A52 Glycoproteomics data analysis of clear cell renal cell carcinoma and lung adenocarcinoma using FragPipe glycoproteomics workflow.** Yi Hsiao<sup>1</sup>, Ginny Xiaohe Li<sup>2</sup>, Daniel A. Polasky<sup>2</sup>, Saravana M. Dhanasekaran<sup>3</sup>, Alexey I. Nesvizhskii<sup>4</sup>. <sup>1</sup>Department of Computational Medicine and Bioinformatics, University of Michigan, Ann Arbor, MI, <sup>2</sup>Department of Pathology, University of Michigan, Ann Arbor, MI, <sup>3</sup>Michigan Center for

**A53 Interleukin-8 produced from cancer-associated fibroblasts suppresses the proliferation of the OCUCh-LM1 cancer cell line.** Naoki Tani<sup>1</sup>, Kenjiro Kimura<sup>1</sup>, Ryota Tanaka<sup>1</sup>, Shimpei Eguchi<sup>1</sup>, Go Ohira<sup>1</sup>, Shogo Tanaka<sup>1</sup>, Hiroaki Tanaka<sup>2</sup>, Masakazu Yashiro<sup>3</sup>, Shoji Kubo<sup>1</sup>, Masaichi Ohira<sup>2</sup>, Takeaki Ishizawa<sup>1</sup>. <sup>1</sup>Department of Hepato-Biliary-Pancreatic Surgery, Osaka Metropolitan University Graduate School of Medicine, Osaka, Japan, <sup>2</sup>Department of Gastroenterological Surgery, Osaka Metropolitan University Graduate School of Medicine, Osaka, Japan, <sup>3</sup>Molecular 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 Suma<sup>1</sup>, Manabu Fujisawa<sup>1</sup>, Yoshiaki Abe<sup>1</sup>, Yasuhito Suehara<sup>1</sup>, Daisuke Kaji<sup>2</sup>, Takeshi Sugio<sup>3</sup>, Koji Kato<sup>4</sup>, Koichi Akashi<sup>4</sup>, Kosei Matsue<sup>5</sup>, Naoya Nakamura<sup>6</sup>, Ayako Suzuki<sup>7</sup>, Yutaka Suzuki<sup>7</sup>, Shigeru Chiba<sup>1</sup>, Mamiko Sakata-Yanagimoto<sup>1</sup>. <sup>1</sup>University of Tsukuba, Tsukuba, Japan, <sup>2</sup>Toranomon Hospital, Tokyo, Japan, <sup>3</sup>Stanford University, Stanford, CA, <sup>4</sup>Kyushu University Graduate School of Medical Science, Fukuoka, Japan, <sup>5</sup>Kameda Medical Center, Kamogawa, Japan, <sup>6</sup>Tokai University School of Medicine, Isehara, Japan, <sup>7</sup>The 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 Wang<sup>1</sup>, Mark Day<sup>1</sup>, Pierre A. Coulombe<sup>1</sup>, Phillip L. Palmbo. University of Michigan Medical School, Ann Arbor, MI.

**A58 PIM1 phosphorylates ABI2 to enhance actin dynamics and promote tumor invasion.** Corbin Jensen<sup>1</sup>, Amber Clements<sup>1</sup>, Hope Liou<sup>1</sup>, Lauren Ball<sup>2</sup>, Jennifer Bethard<sup>2</sup>, Paul Langlais<sup>1</sup>, Shailender Chauhan<sup>1</sup>, Andrew S. Kraft<sup>1</sup>, Anne Cress<sup>1</sup>, Cindy Miranti<sup>1</sup>, Ghassan Mouneimne<sup>1</sup>, Greg Rogers<sup>1</sup>, Noel A. Warfel<sup>1</sup>. <sup>1</sup>University of Arizona, Tucson, AZ, <sup>2</sup>Medical 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 Bady<sup>1</sup>, Katharina Möller<sup>2</sup>, Tim Mandelkow<sup>2</sup>, Maximilian Lennartz<sup>2</sup>, Franziska Büscheck<sup>2</sup>, Till S. Clauditz<sup>2</sup>, Eike Burandt<sup>2</sup>, Guido Sauter<sup>2</sup>, Sarah Minner<sup>2</sup>, Niclas C. Blessin<sup>2</sup>. <sup>1</sup>University Medical Center Hamburg-Eppendorf, Hamburg, Germany, <sup>2</sup>Institute of Pathology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany.

**A61 Plasminogen activator inhibitor-1 is related to colorectal cancer liver metastasis.** Tomokazu Ohishi<sup>1</sup>, Shun-ichi Ohba<sup>2</sup>, Akiko Harakawa<sup>2</sup>, Hiroyuki Inoue<sup>2</sup>, Manabu Kawada<sup>1</sup>. <sup>1</sup>Institute of Microbial Chemistry, Tokyo, Japan, <sup>2</sup>Institute 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 Kawaguchi<sup>1</sup>, Shohei Murakami<sup>1</sup>, Haruna Takeda<sup>1</sup>, Shigeyuki Shichino<sup>2</sup>, Kazuki Hayasaka<sup>1</sup>, Yoshinori Okada<sup>1</sup>, Takashi Suzuki<sup>1</sup>, Hozumi Motohashi<sup>1</sup>. <sup>1</sup>Tohoku University, Sendai, Japan, <sup>2</sup>Tokyo 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 Naito<sup>1</sup>, Robert E. Hynds<sup>2</sup>, David Novo<sup>3</sup>, Probir Chakravarty<sup>4</sup>, Gavin Kelly<sup>4</sup>, Charles Swanton<sup>2</sup>, Kazufumi Honda<sup>1</sup>, Erik Sahai<sup>3</sup>. <sup>1</sup>Department of Bioregulation, Institute for Advanced Medical Sciences, Nippon Medical School, Tokyo, Japan, <sup>2</sup>Cancer Research UK Lung Cancer Centre of Excellence, University College London Cancer Institute, University College London, London, United Kingdom, <sup>3</sup>Tumour Cell Biology Laboratory, The Francis Crick Institute, London, United Kingdom, <sup>4</sup>Bioinformatics, 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 Oda<sup>1</sup>, Masumi Tsuda<sup>2</sup>, Sayaka Yuzawa<sup>3</sup>, Lei Wang<sup>2</sup>, Satoshi Tanikawa<sup>2</sup>, Zen-ichi Tanei<sup>2</sup>, Christian Mawrin<sup>4</sup>, Jian Ping Gong<sup>5</sup>, Shinya Tanaka<sup>2</sup>. <sup>1</sup>Department of Cancer Pathology, Faculty of Medicine, Hokkaido University, Sapporo, Japan, <sup>2</sup>Department of Cancer Pathology, Faculty of Medicine, Hokkaido University, Sapporo, Japan, <sup>3</sup>Department of Diagnostic Pathology, Asahikawa Medical University Hospital, Asahikawa, Japan, <sup>4</sup>Department of Neuropathology, Otto von Guericke University, Magdeburg, Germany, <sup>5</sup>Faculty of Advanced Life Science, Hokkaido University, Sapporo, Japan.

**A66 Hydrogel PCDME creates pancreatic cancer stem cells in OXPHOS metabolic state with TXNIP elevation.** Lei Wang<sup>1</sup>, Yuma Aoki<sup>2</sup>, Masumi Tsuda<sup>3</sup>, Yusuke Saito<sup>3</sup>, Takenori Kubota<sup>2</sup>, Yoshitaka Oda<sup>3</sup>, Satoshi Hirano<sup>4</sup>, Jian Ping Gong<sup>5</sup>, Shinya Tanaka<sup>3</sup>. <sup>1</sup>World Premier International Research Center Initiative, Institute for Chemical Reaction Design and Discovery (WPI-ICReDD), Hokkaido University, Sapporo, Japan, <sup>2</sup>Department of Gastroenterological Surgery II, Hokkaido University Graduate School of Medicine, Sapporo, Japan, <sup>3</sup>Department of Cancer Pathology, Faculty of Medicine, Hokkaido University, Sapporo, Japan, <sup>4</sup>Department of Gastroenterological Surgery II, Faculty of Medicine, Hokkaido University, Sapporo, Japan, <sup>5</sup>Faculty of Advanced Life Science, Hokkaido University, Sapporo, Japan.

**A67 Adipokine adipisin enhances the adipocyte-breast cancer stem cell interaction.** Yohei Shimono<sup>1</sup>, Masahiro Mizuno<sup>1</sup>, Behnoush Khaledian<sup>1</sup>, Hideaki Goto<sup>2</sup>, Yohei Funakoshi<sup>2</sup>, Masao Maeda<sup>1</sup>, Takanori Hayashi<sup>1</sup>, Seiya Mizuno<sup>3</sup>, Seiji Okada<sup>4</sup>, Yuko Kijima<sup>1</sup>, Motoshi Suzuki<sup>1</sup>, Naoya Asai<sup>1</sup>, Fumihiro Sugiyama<sup>3</sup>, Satoru Takahashi<sup>3</sup>, Hironobu Minami<sup>2</sup>. <sup>1</sup>Fujita Health University, Toyoake, Japan, <sup>2</sup>Kobe University, Kobe, Japan, <sup>3</sup>University of Tsukuba, Tsukuba, Japan, <sup>4</sup>Kumamoto University, Kumamoto, Japan.

**A69 SERPINA3 and LCN2 exert the osteoblastic and tumor-suppressive functions in prostate cancer.** Kagenori Ito<sup>1</sup>, Hiroyuki Fujimoto<sup>2</sup>, Takahiro Kimura<sup>3</sup>, Takahiro Ochiya<sup>4</sup>, Yusuke Yamamoto<sup>1</sup>. <sup>1</sup>Laboratory of Integrative Oncology, National Cancer Center Research Institute, Tokyo, Japan, <sup>2</sup>Department of Urology and Retroperitoneal Surgery, National Cancer Center Hospital, Tokyo, Japan, <sup>3</sup>Department of Urology, Jikei University School of Medicine, Tokyo, Japan, <sup>4</sup>Department of Molecular and Cellular Medicine, Tokyo Medical University, Tokyo, Japan.

**A70 Development of novel cancer treatment targeting acidic pH responsive mitochondrial dynamics.** Keisuke Maeda<sup>1</sup>, Sho Aki<sup>1</sup>, Motoaki Seki<sup>2</sup>, Rika Tuchida<sup>1</sup>, Tsuyoshi Osawa<sup>1</sup>. <sup>1</sup>Division of Integrative Nutriomics and Oncology, The University of Tokyo, Tokyo, Japan, <sup>2</sup>Chiba University Hospital, Chiba, Japan.

## Other

**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 Chang<sup>1</sup>, Mar Medina<sup>2</sup>, Dong Yeong Shin<sup>3</sup>, Sun Jung Kim<sup>4</sup>. <sup>1</sup>Texas A&M University, College Station, TX, <sup>2</sup>University of Texas at El Paso, El Paso, TX, <sup>3</sup>New Mexico State University, Las Cruces, NM, <sup>4</sup>Soonchunhyang University, Asan, Korea, Republic of.

**A75 MPath PCR-Plate: Clinical software for automated plate generation of fragment assays.** Sean K. Lachhander<sup>1</sup>, John Ziegler<sup>2</sup>, Aijazuddin Syed<sup>1</sup>, Ahmet Zehir<sup>3</sup>. <sup>1</sup>Memorial Sloan Kettering Cancer Center, New York, NY, <sup>2</sup>Flatiron Health, New York, NY, <sup>3</sup>AstraZeneca, New York, NY.

**A76 Deciphering mechanisms leading to glioblastoma stem cell development by loss of DAB2IP.** Eun-Jin Yun<sup>1</sup>, Dongwhi Kim<sup>1</sup>, Jer-Tsong Hsieh<sup>2</sup>, Seung Tae Baek<sup>1</sup>. <sup>1</sup>POSTECH, Pohang, Korea, Republic of, <sup>2</sup>UT 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.

**A79 Co-infection and cancer: Host–pathogen interaction between dendritic cells and HIV-1, HTLV-1, and other oncogenic viruses.** Daniel J. Gómez, Tania H. Mulherkar, Grace Sandel, Pooja Jain. Drexel University College of Medicine, Philadelphia, PA.

**A80 GliaTrap: A chemoattractant-embedded hydrogel to attract and kill migrating glioblastoma stem cells.** Yusuke Suita<sup>1</sup>, Nikos Tapinos<sup>1</sup>, Saradha Miriyala<sup>1</sup>, Merih Deniz Toruner<sup>1</sup>, Blessing Akobundh<sup>1</sup>, Weizhou Yue<sup>2</sup>, Lingxiao Xie<sup>2</sup>, Seven Toms<sup>1</sup>, Jie Shen<sup>2</sup>. <sup>1</sup>Brown University, Providence, RI, <sup>2</sup>University 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<sup>1</sup>, Wataru Ikeda<sup>2</sup>, Miki Senda<sup>3</sup>, Daisuke Takaya<sup>4</sup>, Teruki Honma<sup>4</sup>, Toshiya Senda<sup>3</sup>, Keiji Tanino<sup>2</sup>, Masanori Hatakeyama<sup>1</sup>. <sup>1</sup>Institute of Microbial Chemistry, Tokyo, Japan, <sup>2</sup>Hokkaido University, Sapporo, Japan, <sup>3</sup>High Energy Accelerator Research Organization, Tsukuba, Japan, <sup>4</sup>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<sup>1</sup>, Hye Seon Kim<sup>2</sup>, Joo Hyeon Park<sup>1</sup>, Jung Bok Lee<sup>1</sup>. <sup>1</sup>Department of Biological Science, Sookmyung Women's University, Seoul, Korea, Republic of, <sup>2</sup>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<sup>1</sup>, David S. Han<sup>2</sup>, Sophie Lee<sup>1</sup>, Paul V. Plourde<sup>3</sup>, Simon Jenkins<sup>3</sup>, David J. Portman<sup>3</sup>. <sup>1</sup>Parexel International, Los Angeles, CA, <sup>2</sup>Parexel International, Glendale, CA, <sup>3</sup>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<sup>1</sup>, Suhyun Kim<sup>1</sup>, Soonil Koun<sup>2</sup>, Hae-Chul Park<sup>2</sup>, Won Sup Yoon<sup>1</sup>, Chai Hong Rim<sup>1</sup>. <sup>1</sup>Korea University Ansan Hospital, Gyeonggi-do, Korea, Republic of, <sup>2</sup>Zebrafish Translational Medical Research Center, Gyeonggi-do, 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.

**A88 Proteasome activation as a novel strategy in cancer treatment: Studies in diverse cancer cell lines.** Ya-Ting Yang, Alison Vanecek, Jetze J. Tepe, Vilma Yuzbasiyan-Gurkan. Michigan State University, East Lansing, MI.

**A89 Multi-pronged computation approach identifies pixantrone as an inhibitor of oncogenic KRAS and a potent radiosensitizer of pancreatic cancer.** Wenjin Zhou<sup>1</sup>, Sunil Krishnan<sup>2</sup>, Mansoor Ahmed<sup>3</sup>, Anil Srivastava<sup>4</sup>, Bhanu Venkatesulu<sup>5</sup>, Pankaj Singh<sup>5</sup>, Lakshmi Mahadevan<sup>5</sup>, Uddhavesh Sonavane<sup>6</sup>, Vinod Jani<sup>6</sup>, Mallikarjunachari Uppuladinne<sup>7</sup>, Rajendra Joshi<sup>6</sup>, Abhilash Jayaraj<sup>8</sup>, Vibha Tandon<sup>9</sup>, Dwarakanath Bilikere<sup>10</sup>. <sup>1</sup>University of Massachusetts Lowell, Lowell, MA, <sup>2</sup>Mayo Clinic, Jacksonville, FL, <sup>3</sup>National Institutes of Health, Rockville,

MD, <sup>4</sup>Open Health Systems Lab, Rockville, MD, <sup>5</sup>MD Anderson, Houston, TX, <sup>6</sup>Pune University, Pune, India, <sup>7</sup>Pune University, Pune, India, <sup>8</sup>Indian Institute of Technology, New Delhi, India, <sup>9</sup>Jawaharlal Nehru University, New Delhi, India, <sup>10</sup>Shanghai Proton and Heavy Ion Center, Shanghai, China (Mainland).

**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 Sasaki<sup>1</sup>, Yasunori Matsumoto<sup>2</sup>, Kentaro Murakami<sup>2</sup>, Takeshi Toyozumi<sup>2</sup>, Ryota Otsuka<sup>2</sup>, Kazuya Kinoshita<sup>2</sup>, Shinichiro Iida<sup>2</sup>, Hiroki Morishita<sup>2</sup>, Hisahiro Matsubara<sup>2</sup>. <sup>1</sup>Chiba University, Department of Frontier Surgery, 千葉市中央区亥鼻1-8-1, Japan, <sup>2</sup>Chiba 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 Zhu<sup>1</sup>, Yun Zhao<sup>1</sup>, Jiling Wen<sup>1</sup>, Sheng Liu<sup>2</sup>, Tianhe Huang<sup>1</sup>, Ishita Hatial<sup>1</sup>, Xiaoxia Peng<sup>1</sup>, Hawraa Al Janabi<sup>1</sup>, Gang Huang<sup>1</sup>, Jackson Mittlesteadt<sup>1</sup>, Michael Cheng<sup>2</sup>, Atul Bhardwaj<sup>1</sup>, Brandon Ashfeld<sup>1</sup>, Kenneth R. Kao<sup>3</sup>, Dean Y. Maeda<sup>4</sup>, Xing Dai<sup>5</sup>, Olaf Wiest<sup>1</sup>, Bria Blagg<sup>1</sup>, Xuemin Lu<sup>1</sup>, Liang Cheng<sup>2</sup>, Jun Wan<sup>2</sup>, Xin Lu<sup>1</sup>. <sup>1</sup>University of Notre Dame, Notre Dame, IN, <sup>2</sup>Indiana University School of Medicine, Indianapolis, IN, <sup>3</sup>Memorial University, St. John's, Canada, <sup>4</sup>Syntrix Biosystems, Inc., Auburn, WA, <sup>5</sup>University of California, Irvine, Irvine, CA.

**B02 Neoantigen paradox: Neoantigens do not always induce an inflamed tumor microenvironment.** Takamasa Ishino<sup>1</sup>, Shusuke Kawashima<sup>2</sup>, Etsuko Tanji<sup>2</sup>, Toshihide Ueno<sup>3</sup>, Youki Ueda<sup>1</sup>, Sadahisa Ogasawara<sup>4</sup>, Kazuhito Sato<sup>5</sup>, Hiroyuki Mano<sup>3</sup>, Soichiro Ishihara<sup>5</sup>, Naoyo Kato<sup>4</sup>, Masahito Kawazu<sup>2</sup>, Yosuke Togashi<sup>1</sup>. <sup>1</sup>Department of Tumor Microenvironment, Faculty of Medicine, Dentistry and Pharmaceutical Sciences, Okayama University, Okayama, Japan, <sup>2</sup>Chiba Cancer Center, Research Institute, Chiba, Japan, <sup>3</sup>Division of Cellular Signaling, National Cancer Center Research Institute, Tokyo, Japan, <sup>4</sup>Department of Gastroenterology, Graduate School of Medicine, Chiba University, Chiba, Japan, <sup>5</sup>Departments 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 Walle<sup>1</sup>, Joscha A. Kraske<sup>1</sup>, Boyu Liao<sup>2</sup>, Jürgen Debus<sup>1</sup>, Peter E. Huber<sup>2</sup>. <sup>1</sup>DKFZ, NCT, University Hospital, Heidelberg, Germany, <sup>2</sup>DKFZ and University Hospital, Heidelberg, Germany.

**B06 CB-020, an induced pluripotent stem cell (iPSC)-derived allogeneic CAR-NK cell therapy, engineered for enhanced activity against solid tumors.** Rodolfo Gonzalez, Erica Hennessy, Hemant Mishra, Zachary Pappalardo, Jackie Bouza, Varsha Ravi, Christian Sunderland, Chae Lee, Sushma Ram, Leslie Edwards, Paul Donohoue, Tristan Fowler, Steven Kanner. Caribou Biosciences, Inc., Berkeley, CA.

**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<sup>1</sup>, Xiaopeng Sun<sup>1</sup>, Paula Gonzalez-Ericsson<sup>2</sup>, Ann Hanna<sup>2</sup>, Elizabeth C. Wescott<sup>1</sup>, Susan R. Opalenik<sup>2</sup>, Justin M. Balko<sup>2</sup>.  
<sup>1</sup>Vanderbilt University, Nashville, TN, <sup>2</sup>Vanderbilt University Medical Center, Nashville, TN.

**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<sup>1</sup>, Mi Ran Choi<sup>2</sup>, Brayley Gattis<sup>1</sup>, Bin Zhang<sup>2</sup>, Nathan Gianneschi<sup>1</sup>. <sup>1</sup>Northwestern, Evanston, IL, <sup>2</sup>Northwestern, Chicago, IL.

**B13 Targeting LSD1 rescues MHC class I-mediated antigen presentation and overcomes PD-L1 blockade resistance in small cell lung cancer.** Evelyn M. Nguyen, Triparna Sen, Andrew Chow, Charles M. Rudin. Memorial Sloan Kettering Cancer Center, New York, NY.

**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, Hidetaka 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<sup>1</sup>. Kanazawa University, Kanazawa, Japan.

**B17 Imaging mass spectrometry detection of decreased B cell presence in human papilloma virus-associated oropharyngeal squamous cell carcinoma primary tumors from patients with recurrent disease.** Kathleen R. Bartemes, Kevin D. Pavelko, Raymond M. Moore, William A. Sherman, Christine M. Lohse, Marissa M. Larson, Nicole M. Tombers, Linda X. Yin, David M. Routman, Kathryn M. Van Abel. Mayo Clinic, Rochester, MN.

**B18 FGFR inhibition enhances efficacy of PD-1 blockade in an FGFR3<sup>S249C</sup> driven model of high grade, non-muscle invasive bladder cancer.** Atsushi Okato<sup>1</sup>, Takano Utsumi<sup>1</sup>, Michela Ranieri<sup>2</sup>, Xingnan Zheng<sup>1</sup>, Luiza Doro Pereira<sup>2</sup>, Ujjawal Manocha<sup>1</sup>, Chen Ting<sup>2</sup>, Mi Zhou<sup>1</sup>, Jeffrey S. Damrauer<sup>1</sup>, Kwok-Kin Wong<sup>2</sup>, William Y. Kim<sup>1</sup>. <sup>1</sup>Lineberger

Comprehensive Cancer Center, Chapel Hill, NC, <sup>2</sup>Laura and Isaac Perlmutter Cancer Center, NYU School of Medicine, New York, NY.

**B19 ARID1A deficiency induces adaptive immune resistance and druggable PD-L1 in triple negative breast cancer via NPM1.** Xichun Hu<sup>1</sup>, Zhonghua Tao<sup>1</sup>, Xinyu Chen<sup>1</sup>, Bin Li<sup>1</sup>, Ye Wang<sup>1</sup>, Juan Jin<sup>1</sup>, Yu Yang<sup>2</sup>, Leihuan Huang<sup>2</sup>, Mengdi Yang<sup>1</sup>, Jian Zhang<sup>1</sup>, Biyun Wang<sup>1</sup>, Zhiming Shao<sup>1</sup>, Ting Ni<sup>2</sup>. <sup>1</sup>Fudan University Shanghai Cancer Center, Shanghai, China (Mainland), <sup>2</sup>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<sup>1</sup>, Xiulong Song<sup>1</sup>, Jinpeng Liu<sup>1</sup>, Xufeng Qu<sup>2</sup>, Jinze Liu<sup>2</sup>, Kwok-kin Wong<sup>3</sup>, Christine F. Brainson<sup>1</sup>. <sup>1</sup>University of Kentucky, Lexington, KY, <sup>2</sup>Virginia Commonwealth University, Richmond, VA, <sup>3</sup>New York University, New York, NY.

**B22 TGF- $\beta$ 2 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<sup>1</sup>, Bongyong Lee<sup>1</sup>, Menglang Yuan<sup>1</sup>, Stacie Stapleton<sup>2</sup>, George Jallo<sup>2</sup>, Sudipta Seal<sup>3</sup>, Charles Eberhart<sup>1</sup>, Ranjan J. Perera<sup>1</sup>. <sup>1</sup>Johns Hopkins University School of Medicine, Baltimore, MD, <sup>2</sup>Johns Hopkins All Children's Hospital, St. Petersburg, FL, <sup>3</sup>University of Central Florida, Orlando, FL.

**B33 Targeting epigenetic regulation in clear cell renal cell carcinoma reveals PRMT1 as a novel target.** Joseph Walton<sup>1</sup>, Angel S.N. Ng<sup>2</sup>, Anthony Apostoli<sup>3</sup>, Jalna Meens<sup>3</sup>, Christina Karamboulas<sup>3</sup>, Julia Dmytryshyn<sup>3</sup>, Felipe Ciamponi<sup>4</sup>, Panagiotis Prinos<sup>5</sup>, Brian Raught<sup>3</sup>, Eric

Chen<sup>3</sup>, Cheryl Arrowsmith<sup>6</sup>, Laurie Ailles<sup>7</sup>. <sup>1</sup>Department of Medical Biophysics, University of Toronto, Toronto, ON, Canada, <sup>2</sup>Department of Medical Biophysics, University of Toronto, Toronto, ON, Canada, <sup>3</sup>Princess Margaret Cancer Centre, University Health Network, Toronto, ON, Canada, <sup>4</sup>Structural Genomics Consortium, Toronto, ON, Canada, <sup>5</sup>University of Toronto, Structural Genomics Consortium, Toronto, ON, Canada, <sup>6</sup>Department of Medical Biophysics, University of Toronto and Princess Margaret Cancer Centre, University Health Network, Toronto, ON, Canada, <sup>7</sup>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<sup>1</sup>, Wenting Zhao<sup>1</sup>, Hongxu Ding<sup>2</sup>, Nicola Balboni<sup>1</sup>, Kenneth Egbuji<sup>1</sup>, Pasquale Laise<sup>3</sup>, Mariano J. Alvarez<sup>4</sup>, Michael G. Argenziano<sup>5</sup>, Julia L. Furnari<sup>1</sup>, Matei A. Banu<sup>1</sup>, Jeffrey N. Bruce<sup>1</sup>, Peter D. Canoll<sup>1</sup>, Peter A. Sims<sup>1</sup>, Andrea Califano<sup>1</sup>. <sup>1</sup>Columbia University Irving Medical Center, New York, NY, <sup>2</sup>University of Arizona, Tucson, AZ, <sup>3</sup>Columbia University Irving Medical Center / DarwinHealth, New York, NY, <sup>4</sup>DarwinHealth / Columbia University Irving Medical Center, New York, NY, <sup>5</sup>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<sup>1</sup>, Mengjiao Li<sup>2</sup>, Yasuto Takeuchi<sup>2</sup>, Daisuke Shiokawa<sup>3</sup>, Kang Wang<sup>4</sup>, Tetsu Akiyama<sup>5</sup>, Dominic C. Voon<sup>1</sup>, Hiroshi Asahara<sup>6</sup>, Masahiro Nakagawa<sup>7</sup>, Shinya Sato<sup>8</sup>, Yohei Miyagi<sup>8</sup>, Teppei Shimamura<sup>9</sup>, Ryuichiro Nakato<sup>5</sup>, Yutaka Suzuki<sup>10</sup>, Seishi Ogawa<sup>7</sup>, Koji Okamoto<sup>3</sup>, Theodoros Foukakis<sup>4</sup>. <sup>1</sup>Cancer Research Institute, Kanazawa University, Kanazawa, Japan, <sup>2</sup>Kanazawa University, Kanazawa, Japan, <sup>3</sup>National Cancer Center Research Institute, Chuo-ku, Japan, <sup>4</sup>Karolinska Institute, Stockholm, Sweden, <sup>5</sup>Institute for Quantitative Biosciences, The University of Tokyo, Bunkyo-ku, Japan, <sup>6</sup>Tokyo Medical and Dental University, Bunkyo-ku, Japan, <sup>7</sup>Kyoto University, Kyoto, Japan, <sup>8</sup>Kanagawa Cancer Center Research Institute, Yokohama, Japan, <sup>9</sup>Nagoya University, Nagoya, Japan, <sup>10</sup>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<sup>1</sup>, Yuko Omori<sup>2</sup>, Masaharu Ishida<sup>1</sup>, Fumiko Date<sup>2</sup>, Hideaki Karasawa<sup>1</sup>, Shun Nakayama<sup>1</sup>, Daisuke Douchi<sup>1</sup>, Takayuki Miura<sup>1</sup>, Hideo Ohtsuka<sup>1</sup>, Masamichi Mizuma<sup>1</sup>, Kei Nakagawa<sup>1</sup>, Takanori Morikawa<sup>1</sup>, Atsushi Masamune<sup>3</sup>, Michiaki Unno<sup>1</sup>, Toru Furukawa<sup>2</sup>. <sup>1</sup>Dept. Surgery, Tohoku Univ. Grad. Sch. Med., Sendai, Japan, <sup>2</sup>Dept. Investigative Pathology, Tohoku Univ. Grad. Sch. Med., Sendai, Japan, <sup>3</sup>Div. Gastroenterology, 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<sup>1</sup>, Jun Nishida<sup>2</sup>, Kei Takahashi<sup>3</sup>, Masato Morikawa<sup>4</sup>, Shogo Ehata<sup>5</sup>, Daizo Koinuma<sup>6</sup>, Kohei Miyazono<sup>1</sup>. <sup>1</sup>Department of Applied Pathology, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan, <sup>2</sup>Dana-Farber Cancer Institute, Harvard Medical School, Boston, MA, <sup>3</sup>Department of Chemistry, University of Alberta, Edmonton, AB, Canada, <sup>4</sup>Advanced Comprehensive Research Organization, Teikyo University, Tokyo, Japan, <sup>5</sup>Department of Pathology, Wakayama Medical University, Wakayama, Japan, <sup>6</sup>Department 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, Nikee Awasthee, Xuan Zhang, Zhiguang Huo, Guangrong Zheng, Daiqing 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<sup>1</sup>, Simon Khagi<sup>2</sup>. <sup>1</sup>Duke University Medical Center, Durham, NC, <sup>2</sup>Dartmouth 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<sup>1</sup>, Denise Munoz<sup>2</sup>, Ignacio E. Schor<sup>3</sup>, Camila Arcuschin<sup>3</sup>, Kamin Kahrizi<sup>3</sup>, Rosalyn W. Sayaman<sup>4</sup>, Ons Zakraoui<sup>2</sup>, Julie D. Saba<sup>2</sup>, Jen-Yeu Wang<sup>5</sup>, Jean-Philippe Coppé<sup>2</sup>, Laura Van't Veer<sup>4</sup>, Dietmar Kappes<sup>6</sup>. <sup>1</sup>Harvard Medical School, Boston, MA, <sup>2</sup>University of California San Francisco, San Francisco, CA, <sup>3</sup>Universidad de Buenos Aires, Buenos Aires, Argentina, <sup>4</sup>University of California San Francisco, San Francisco, CA, <sup>5</sup>Stanford University, Palo Alto, CA, <sup>6</sup>Fox Chase Cancer Center, Philadelphia, PA.

**B46 Specific roles of FXYD3 positive cancer stem cells in radio-resistance.** Masahiro Yamazaki<sup>1</sup>, Mengjiao Li<sup>2</sup>, Tatsunori Nishimura<sup>2</sup>, Shigeyuki Takamatsu<sup>3</sup>, Toshifumi Gabata<sup>3</sup>, Masaya Ueno<sup>4</sup>, Atsushi Hirao<sup>4</sup>, Noriko Gotoh<sup>5</sup>. <sup>1</sup>Division 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, <sup>2</sup>Division of Cancer Cell Biology, Cancer Research Institute of Kanazawa University, Kanazawa, Japan, <sup>3</sup>Department of Radiology, Graduate School of Medicine, Kanazawa University, Kanazawa, Japan, <sup>4</sup>Division of Molecular Genetics, Cancer Research Institute, WPI Nano Life Science Institute, Kanazawa University, Kanazawa, Japan, <sup>5</sup>Division 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 Shinjo<sup>1</sup>, Takashi Umehara<sup>2</sup>, Yoshiteru Murofushi<sup>1</sup>, Miho Suzuki<sup>1</sup>, Yutaka Kondo<sup>1</sup>. <sup>1</sup>Nagoya University Graduate School of Medicine, Nagoya, Japan, <sup>2</sup>RIKEN 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 Abe<sup>1</sup>, Toshikazu Ushijima<sup>2</sup>, Kazuto Hoshi<sup>1</sup>. <sup>1</sup>The University of Tokyo, Tokyo, Japan, <sup>2</sup>National 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 Ascheid<sup>1</sup>, Magdalena Baumann<sup>1</sup>, Jürgen Pinnecker<sup>1</sup>, Mike Friedrichs<sup>1</sup>, Cornelia Medved<sup>1</sup>, Katherina Hemmen<sup>1</sup>, Matthias Hirth<sup>2</sup>, Katrin G. Heinze<sup>1</sup>, Erik Henke<sup>1</sup>. <sup>1</sup>University of Wuerzburg, Wuerzburg, Germany, <sup>2</sup>Technical 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 Skorda<sup>1</sup>, Marie Lund Bay<sup>1</sup>, Anna Røssberg Lauridsen<sup>1</sup>, Wojciech Senkowski<sup>2</sup>, Krister Wennerberg<sup>2</sup>, Johanna Hynninen<sup>3</sup>, Kaisa Huhtinen<sup>4</sup>, Sampsa Hautaniemi<sup>4</sup>, Tuula Kallunki<sup>1</sup>. <sup>1</sup>Cancer Invasion and Resistance, Danish Cancer Society Research Center, Copenhagen, Denmark, <sup>2</sup>Biotech Research and Innovation Center, University of Copenhagen, Copenhagen, Denmark, <sup>3</sup>Department of Obstetrics and Gynecology, Turku University Hospital and University of Turku, Turku, Finland, <sup>4</sup>Systems 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 Charbonneau<sup>1</sup>, Kelly Harper<sup>1</sup>, Karine Brochu-Gaudreau<sup>1</sup>, Alexis Perreault<sup>1</sup>, Laurent-Olivier Roy<sup>1</sup>, Fabrice Lucien<sup>2</sup>, Shulan Tian<sup>2</sup>, David Fortin<sup>1</sup>, Claire M. Dubois<sup>1</sup>. <sup>1</sup>Université de Sherbrooke, Sherbrooke, Canada, <sup>2</sup>Mayo Clinic, Rochester, MN.

**B62 HER2 as a therapeutic target in bladder cancer.** Xinran Tang<sup>1</sup>, Ziyu Chen<sup>1</sup>, Andrew Mcpherson<sup>1</sup>, Jasmine Thomas<sup>1</sup>, Naryan Rustgi<sup>1</sup>, Carissa Chu<sup>1</sup>, Sizhi Gao<sup>1</sup>, John Christin<sup>2</sup>, Irina Ostrovnya<sup>1</sup>, Michael Berger<sup>1</sup>, Neeman Mohibullah<sup>1</sup>, Michael Shen<sup>2</sup>, Sarat Chandarlapaty<sup>1</sup>, Hikmat Al-Ahmadie<sup>1</sup>, Gopakumar Iyer<sup>1</sup>, Kwanghee Kim<sup>1</sup>, David Solit<sup>1</sup>. <sup>1</sup>MSKCC, New York, NY, <sup>2</sup>Columbia 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 Kashiwagi<sup>1</sup>, Ryo Funayama<sup>2</sup>, Shuichi Aoki<sup>1</sup>, Hideaki Karasawa<sup>1</sup>, Koetsu Inoue<sup>1</sup>, Masahiro Iseki<sup>1</sup>, Takayuki Miura<sup>1</sup>, Masaharu Ishida<sup>1</sup>, Hideo Ohtsuka<sup>1</sup>, Masamichi Mizuma<sup>1</sup>, Kei Nakagawa<sup>1</sup>, Takanori Morikawa<sup>1</sup>, Michiaki Unno<sup>1</sup>, Keiko Nakayama<sup>3</sup>. <sup>1</sup>Department of Surgery, Graduate School of Medicine, Tohoku University, Sendai, Japan, <sup>2</sup>Department of Cell Proliferation, Graduate School of Medicine, Tohoku University, Sendai, Japan, <sup>3</sup>Department of Cell Proliferation, ART, Graduate School of Medicine, Tohoku University, Sendai, Japan.

**B65 Identification of metastatic genes in small cell lung cancer using orthotopic transplantation model.** Shuichi Sakamoto, Hiroyuki Inoue, Yasuko Kohda, Shun-ichi Ohba, Ihome Usami, Manabu Kawada. Institute of Microbial Chemistry, Numazu, Japan.

**B66 Targeted nanomedicines for GVHD-mediated acute kidney injury.** Magdalini Panagiotakopoulou<sup>1</sup>, Anastasia Kousa<sup>1</sup>, Stephen Ruiz<sup>1</sup>, Emma Grabarnik<sup>2</sup>, Edgar A. Jaimes<sup>1</sup>, Marcel R. Van Den Brink<sup>1</sup>, Daniel A. Heller<sup>1</sup>. <sup>1</sup>Memorial Sloan Kettering Cancer Center, New York, NY, <sup>2</sup>Frederick 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. Buckhaults<sup>1</sup>, Sana Khalili<sup>1</sup>, Carolyn E. Banister<sup>1</sup>, Prashanth R. Gokare<sup>2</sup>, Dave Pocalyko<sup>2</sup>, Kurtis Bachman<sup>2</sup>. <sup>1</sup>University of South Carolina, Columbia, SC, <sup>2</sup>Janssen Research and Development, Spring House, PA.

**B68 Using lung cancer organoids to model malignant transformation and accurately predict *in vivo* drug responses.** Christine Fillmore Brainson<sup>1</sup>, Fan Chen<sup>2</sup>, Tanner J. DuCote<sup>3</sup>, Kassandra J. Naughton<sup>3</sup>. <sup>1</sup>University of Kentucky, Markey Cancer Center, Lexington, KY, <sup>2</sup>University of Kentucky, Sun-Yat Sen Cancer Center, Lexington, KY, <sup>3</sup>University 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.

**B70 Organoid models for predicting drug responses to PARP inhibitors combined with inhibitors of anti-apoptosis proteins in high grade serous cancer.** David W. Andrews, Alla Buzina, Betty Li, Lilian Gien, Helen MacKay. Sunnybrook Research Institute, Toronto, ON, Canada.

**B73 Transcriptomic intratumor heterogeneity of breast cancer patient-derived organoids may reflect biological features of the organoids.** Sumito Saeki<sup>1</sup>, Kohei Kumegawa<sup>2</sup>, Yoko Takahashi<sup>3</sup>, Kenichi Miyata<sup>4</sup>, Kazutaka Otsuji<sup>5</sup>, Jun Suzuka<sup>5</sup>, Mahmut Yansen<sup>6</sup>, Tetsuo Noda<sup>7</sup>, Shinji Ohno<sup>8</sup>, Takayuki Ueno<sup>9</sup>, Reo Maruyama<sup>4</sup>. <sup>1</sup>Project for Cancer Epigenomics, Cancer Inst., Japanese Foundation for Cancer Research, Tokyo, Japan, <sup>2</sup>NEXT-Ganken Prog., Japanese Foundation for Cancer Research, Tokyo, Japan, <sup>3</sup>Breast Surg. Oncol., Cancer Inst. Hosp., Japanese Foundation for Cancer Research, Tokyo, Japan, <sup>4</sup>Project for Cancer Epigenomics, Cancer Institute, Japanese Foundation for Cancer Research, Tokyo, Japan, <sup>5</sup>Cancer Cell Diversity Project, NEXT-Ganken Program, Japanese Foundation for Cancer Research, Tokyo, Japan, <sup>6</sup>Cancer Informatics and Biobanking Platform Project, NEXT-Ganken Program, Japanese Foundation for Cancer Research, Tokyo, Japan, <sup>7</sup>Director's Room, Cancer Institute, Japanese Foundation for Cancer Research, Tokyo, Japan, <sup>8</sup>Breast Oncology Center, Cancer Institute Hospital, Japanese Foundation for Cancer Research, Tokyo, Japan, <sup>9</sup>Breast Surgical Oncology, Breast Oncology Center, Cancer Institute Hospital, Japanese Foundation for Cancer Research, Tokyo, Japan.

**B74 Characterization of tumor organoids generated from a Lynch syndrome mouse model.** Yurong Song<sup>1</sup>, Travis Kerr<sup>1</sup>, Chelsea Sanders<sup>1</sup>, Lisheng Dai<sup>1</sup>, Shaneen Baxter<sup>1</sup>, Brandon Somerville<sup>1</sup>, Sandra Burkett<sup>2</sup>, Ryan N. Baugher<sup>1</sup>, Stephanie D. Mellott<sup>1</sup>, Todd B. Young<sup>1</sup>, Heidi E. Lawhorn<sup>1</sup>, Teri M. Plona<sup>1</sup>, Bingfang Xu<sup>1</sup>, Lei Wei<sup>3</sup>, Qiang Hu<sup>3</sup>, Song Liu<sup>3</sup>, Alan Hutson<sup>3</sup>, Baktiar Karim<sup>1</sup>, Simone Difilippantonio<sup>1</sup>, Ligia Pinto<sup>1</sup>, Matthias Kloor<sup>4</sup>, Steven M. Lipkin<sup>5</sup>, Shizuko Sei<sup>6</sup>, Robert H. Shoemaker<sup>6</sup>. <sup>1</sup>Frederick National Laboratory for Cancer Research, Frederick, MD, <sup>2</sup>National Cancer Institute at Frederick, Frederick, MD, <sup>3</sup>Roswell Park Comprehensive Cancer Center, Buffalo, NY, <sup>4</sup>German Cancer Research Center, Heidelberg, Germany, <sup>5</sup>Weill Cornell Medical College, New York, NY, <sup>6</sup>Division of Cancer Prevention, National Cancer Institute, Bethesda, MD.

## Other

**B75 Synthetic lethal approach that targets c-MYC-driven cancers using small molecule compounds.** Yohko Yamazaki<sup>1</sup>, Takefumi Onodera<sup>1</sup>, Manabu Kawada<sup>2</sup>, Isao Momose<sup>1</sup>. <sup>1</sup>Institute of Microbial Chemistry (BIKAKEN), Numazu, Shizuoka, Japan, <sup>2</sup>Inst. Microbial Chemistry (BIKAKEN), Lab. Oncology, Tokyo, Japan.

**B76 Reliable and cost-effective enrichment-based analysis of 5-hydroxymethylcytosine at single-base resolution.** Dongin Lee<sup>1</sup>, Jaywon Lee<sup>1</sup>, Hwang-Phil Kim<sup>2</sup>, Tae-You Kim<sup>3</sup>, Duhee Bang<sup>1</sup>. <sup>1</sup>Yonsei University, Seoul, Korea, Republic of, <sup>2</sup>IMBdx, Seoul, Korea, Republic of, <sup>3</sup>Seoul 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- $\beta$  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 Shin<sup>1</sup>, Jungwon Choi<sup>1</sup>, Ji Hyun Lee<sup>2</sup>, Duhee Bang<sup>1</sup>. <sup>1</sup>Yonsei University, Seoul, Korea, Republic of, <sup>2</sup>Kyung 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 Mahipal<sup>1</sup>, Sri Harsha Tella<sup>2</sup>, Nathan Foster<sup>2</sup>, Shi Qian<sup>2</sup>, Nguyen Tran<sup>2</sup>, Zhaohui Jin<sup>2</sup>, Wen Wee Ma<sup>2</sup>. <sup>1</sup>Seidman Cancer Center, Case Western Reserve University, Cleveland, OH, <sup>2</sup>Mayo Clinic, Rochester, MN.

**B82 Induction of lethal mitotic stress by unbalancing mitotic kinases in cancer cells.** Motoko Takahashi, Minji Jo, Utako Kato, Nana Kamakura, Norika Kawakita, Toru Hirota. Japanese Foundation for Cancer Research, Tokyo, Japan.

**B83 Epithelial cell adhesion molecule 1 (EpCAM) expression in human tumor: A comparison with pan-cytokeratin and TROP2 (EpCAM-2) in 14,832 tumors.** Natalia Gorbokon, Nora Lony, Niclas Christian Blessin, David Dum, Stefan Steurer, Guido Sauter, Ronald Simon, Maximilian Lennartz, Eike-Christian Burandt, Soeren Weidemann. Institute of Pathology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany.

**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.

**B87 Prognostic value of cell-free tumor DNA in the abdominal lavage in patients with colorectal cancer.** Koji Ueda, Takeshi Yamada, Ryo Ohta, Akihisa Matsuda, Hiromichi Sonoda, Seiichi Shinji, Goro Takahashi, Kohki Takeda, Sho Kuriyama, Toshimitsu Miyasaka, Shintaro Kanaka, Hiroshi Yoshida. Nippon Medical School, Bunkyo-ku, Japan.

**B88 Therapeutic landscape of *EGFR L747P* mutated non-small cell lung cancer (NSCLC): Role of osimertinib.** Anuhya Kommalapati, Yash Ashara, Konstantinos Leventakos. 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 Tang<sup>1</sup>, Minwei Liu<sup>1</sup>, Fenshen Kuo<sup>2</sup>, Robert Motzer<sup>3</sup>, Paul Russo<sup>2</sup>, Jonathan Coleman<sup>2</sup>, Maria I. Carlo<sup>3</sup>, Martin Voss<sup>3</sup>, Nikolaus Schultz<sup>1</sup>, A. Ari Hakimi<sup>2</sup>, Ed Reznik<sup>1</sup>. <sup>1</sup>Computational Oncology, Memorial Sloan Kettering Cancer Center, New York, NY, <sup>2</sup>Urology Service, Department of Surgery, Memorial Sloan Kettering Cancer Center, New York, NY, <sup>3</sup>Genitourinary 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 Momose<sup>1</sup>, Takefumi Onodera<sup>1</sup>, Hayamitsu Adachi<sup>1</sup>, Yokko Yamazaki<sup>1</sup>, Ryuichi Sawa<sup>2</sup>, Shun-ichi Ohba<sup>1</sup>, Manabu Kawada<sup>2</sup>. <sup>1</sup>Institute of Microbial Chemistry, Numazu, Shizuoka, Japan, <sup>2</sup>Institute 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 Leeuwen<sup>1</sup>, Wail Ba-Alawi<sup>1</sup>, Emily Branchard<sup>1</sup>, Jennifer Cruickshank<sup>1</sup>, Wiebke Schormann<sup>2</sup>, Joseph Longo<sup>1</sup>, Jennifer Silvester<sup>1</sup>, Peter L. Gross<sup>3</sup>, David W. Andrews<sup>2</sup>, David W. Cescon<sup>1</sup>, Benjamin Haibe-Kains<sup>1</sup>, Deena M.A. Gendoo<sup>4</sup>, Linda Z. Penn<sup>1</sup>. <sup>1</sup>Princess Margaret Cancer Centre, Toronto, ON, Canada, <sup>2</sup>Sunnybrook Research Institute, Toronto, ON, Canada, <sup>3</sup>McMaster University, Hamilton, ON, Canada, <sup>4</sup>University of Birmingham, Birmingham, United Kingdom.

**C08 Mitochondrial respiratory supercomplex assembly factor COX7RP regulates metabolism leading to growth in cancer cells.** Kazuhiro Ikeda<sup>1</sup>, Kuniko Horie<sup>1</sup>, Satoshi Inoue<sup>2</sup>. <sup>1</sup>Saitama Medical University, Hidaka, Japan, <sup>2</sup>Tokyo Metropolitan Institute of Gerontology, Tokyo, Japan.

**C09 Cancer-associated fibroblast-derived itaconate in tumor microenvironment promotes tumor growth in cervical cancer.** Ryuichi Nakahara<sup>1</sup>, Miki Kato<sup>1</sup>, Sho Aki<sup>1</sup>, Miyuki Nishida<sup>1</sup>, Maki Sugaya<sup>1</sup>, Rika Tsuchida<sup>1</sup>, Tepei Shimamura<sup>2</sup>, Atsushi Enomoto<sup>2</sup>, Tsuyoshi Osawa<sup>1</sup>. <sup>1</sup>University of Tokyo, Tokyo, Japan, <sup>2</sup>Nagoya 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.

**C11 Glycoprotein hyposialylation promotes chemoresistance and cluster formation of quiescent circulating tumor cells in metastatic breast cancer.** Nurmaa Khund Dashzeveg, Huiping Liu. Northwestern University, Chicago, IL.

**C12 Novel therapies targeting lipocalin-1 in inflammatory breast cancer.** Pablo E. Vivas. Universidad de Puerto Rico Recinto de Río Piedras, San Juan, Puerto Rico.

**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 Sinha<sup>1</sup>, Neelam Sinha<sup>2</sup>, Eytan Ruppin<sup>3</sup>. <sup>1</sup>National Cancer Institute, NIH, College Park, MD, <sup>2</sup>National Institutes of Health, College Park, MD, <sup>3</sup>National Cancer Institute, NIH, Bethesda, MD.

**C17 The  $\alpha$ -trifluoromethyl chalcone, YS71 exerts antitumor effects against androgen-sensitive LNCaP and PC-3-TxR/CxR, DU145-TxR/CxR cells.** Takafumi Shimada<sup>1</sup>, Hiroshi Kano<sup>1</sup>, Kouji Izumi<sup>1</sup>, Yohei Saito<sup>2</sup>, Kyoko Nakagawa-Goto<sup>2</sup>, Atsushi Mizokami<sup>1</sup>. <sup>1</sup>Department of Integrative Cancer Therapy and Urology, Kanazawa University Graduate School of Medical Science, Kanazawa, Japan, <sup>2</sup>School 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.

**C19 Targeting the niche of drug-tolerant tumor-repopulating cells to eradicate residual disease in triple-negative breast cancer.** Morgane F. Decollogny, Sven Rottenberg, Demeter Túrós, Ismar Klebic. University of Bern, Bern, Switzerland.

**C20 MET kinase inhibitor reverses resistance to entrectinib induced by hepatocyte growth factor in tumors with NTRK1 or ROS1 rearrangements.** Yohei Takumi<sup>1</sup>, Sachiko Arai<sup>2</sup>, Chiaki Suzuki<sup>2</sup>, Koji Fukuda<sup>2</sup>, Akihiro Nishiyama<sup>2</sup>, Shinji Takeuchi<sup>2</sup>, Hiroki Sato<sup>3</sup>, Kunio Matsumoto<sup>3</sup>, Atsushi Osoegawa<sup>1</sup>, Kenji Sugio<sup>4</sup>, Seiji Yano<sup>2</sup>. <sup>1</sup>Department of Thoracic and Breast Surgery, Oita University, Faculty of Medicine, Yufu, Oita, Japan, <sup>2</sup>Division of Medical Oncology, Cancer Research Institute, Kanazawa University, Kanazawa, Japan, <sup>3</sup>Division of Tumor Dynamics and Regulation, Cancer Research Institute, Kanazawa University, Kanazawa,

Japan, <sup>4</sup>Department of Thoracic and Breast Surgery, Oita University, Faculty of Medicine, Yufu, Oita, Japan.

**C21 NSMCE2, a novel super-enhancer-regulated gene, is linked to poor prognosis and therapy resistance in breast cancer.** Paola Betancur. University of California, San Francisco, San Francisco, CA.

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

**C24 Targeting sorting nexins to treat ErbB dependent breast cancer.** Ben Atwell<sup>1</sup>, Joyce Schroeder<sup>1</sup>, Cheng-Yu Chen<sup>2</sup>, William Montfort<sup>1</sup>. <sup>1</sup>University of Arizona, Tucson, AZ, <sup>2</sup>Bristol 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 Jun<sup>1</sup>, Sanghyuk Lee<sup>2</sup>. <sup>1</sup>Korea Institute of Science and Technology Information, Daejeon, Korea, Republic of, <sup>2</sup>Ewha Womans University, Seoul, Korea, Republic of.

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

**C30 Upregulation of matrix metalloproteinase-3 (MMP-3) promotes cisplatin-resistance in ovarian cancer.** Mariela Rivera-Serrano<sup>1</sup>, Blanca Quiñones-Díaz<sup>2</sup>, Pablo Vivas-Mejía<sup>2</sup>. <sup>1</sup>University of Puerto Rico Rio Piedras Campus, San Juan, Puerto Rico, <sup>2</sup>University of Puerto Rico Medical Sciences Campus, San Juan, Puerto Rico.

**C32 Therapeutic strategies based on actin cytoskeleton dynamics for targeting chemoresistant osteosarcoma stem cells.** Hiroyuki Nobusue<sup>1</sup>, Takatsune Shimizu<sup>2</sup>, Nobuhiro Takahashi<sup>3</sup>, Sayaka Yamaguchi<sup>4</sup>, Eiji Sugihara<sup>5</sup>, Nobuyuki Onishi<sup>6</sup>, Hideyuki Saya<sup>1</sup>. <sup>1</sup>Div. Gene. Reg, Fujita Cancer Center, Fujita Health Univ., Aichi, Japan, <sup>2</sup>Dept. Pathophysiology, Hoshi Univ., Tokyo, Japan, <sup>3</sup>Dept. Pediatric Surg. Keio Univ., Sch. Med., Tokyo, Japan, <sup>4</sup>Dept. Orthopedic Surg. Keio Univ., Sch. Med., Tokyo, Japan, <sup>5</sup>Fujita Health Univ Joint Usage, Aichi, Japan, <sup>6</sup>Clinical Research Institute for Clinical Pharmacology and Therapeutics, Showa Univ., Tokyo, Japan.



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

**C34 Substance P receptor antagonism enhances chemotherapeutic responses in triple negative breast cancer.** Prema Robinson<sup>1</sup>, Viviana Villalobos<sup>2</sup>, Emma Rodriguez<sup>1</sup>. <sup>1</sup>University of Texas MD Anderson Cancer Center, Houston, TX, <sup>2</sup>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<sup>1</sup>, Yuanyuan Fu<sup>1</sup>, Vedbar S. Khadka<sup>1</sup>, Masaki Nasu<sup>1</sup>, Ken D. Kobayashi<sup>1</sup>, Ken Nakatsu<sup>2</sup>, Matthew Huo<sup>3</sup>, Youping Deng<sup>1</sup>. <sup>1</sup>University of Hawaii at Manoa, Honolulu, HI, <sup>2</sup>Emory University, Atlanta, GA, <sup>3</sup>Punahou School, Honolulu, HI.

**C38 Targeting SGLT2 for the diagnosis and treatment of early lung adenocarcinoma.** Jane Yanagawa, Eileen Fung, Pasquale Saggese, Aparamita Pandey, Ashley Prosper, Denise Aberle, Jie Liu, Jorge Barrio, Steven Dubinett, Claudio Scafoglio. University of California Los Angeles, Los Angeles, CA.

**C39 Mutated proteome analysis of circulating extracellular vesicles enabled sensitive and effective liquid biopsy for renal cell cancer.** Yuji Hakozaiki<sup>1</sup>, Yuta Yamada<sup>2</sup>, Haruki Kume<sup>2</sup>, Koji Ueda<sup>1</sup>. <sup>1</sup>Japanese Foundation for Cancer Research, Tokyo, Japan, <sup>2</sup>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 Forder<sup>1</sup>, Bradley Coe<sup>2</sup>, Wan Lam<sup>1</sup>, Andrew Thamboo<sup>3</sup>, Cathie Garnis<sup>1</sup>. <sup>1</sup>BC Cancer Research Center, Vancouver, BC, Canada, <sup>2</sup>BC Children's and Women's Hospital, Vancouver, BC, Canada, <sup>3</sup>St. Paul's Sinus Center, Otolaryngology Head and Neck Surgery, Vancouver, BC, Canada.

**C43 Novel urinary biomarkers for subclinical detection of early-stage cholangiocarcinoma.** Taisuke Baba<sup>1</sup>, Masaki Sunagawa<sup>1</sup>, Junpei Yamaguchi<sup>1</sup>, Takashi Mizuno<sup>1</sup>, Toshio Kokuryo<sup>1</sup>, Hizuru Amano<sup>2</sup>, Shun Kumano<sup>3</sup>, Takashi Ishigaki<sup>3</sup>, Akinari Hinoki<sup>2</sup>, Tomoki Ebata<sup>1</sup>. <sup>1</sup>Division of Surgical Oncology, Department of Surgery, Nagoya University Graduate School of Medicine, Nagoya, Japan, <sup>2</sup>Department of Rare/Intractable Cancer Analysis Research, Nagoya University Graduate School of Medicine, Nagoya, Japan, <sup>3</sup>Research & Development Group, Hitachi, Ltd., Tokyo, Japan.

**C44 Cervicovaginal protein biomarkers for non-invasive detection of endometrial cancer.** Pawel Laniewski<sup>1</sup>, Haiyan Cui<sup>2</sup>, Nichole Mahner<sup>3</sup>, Jamal Mourad<sup>3</sup>, Matthew P. Borst<sup>3</sup>, Lyndsay Willmott<sup>4</sup>, Dana M. Chase<sup>4</sup>, Denise Roe<sup>2</sup>, Melissa M. Herbst-Kralovetz<sup>1</sup>. <sup>1</sup>University of Arizona, College of Medicine-Phoenix, Phoenix, AZ, <sup>2</sup>University of Arizona, Tucson, AZ, <sup>3</sup>Banner – University Medical Center, Phoenix, AZ, <sup>4</sup>Arizona Center for Cancer Care, Phoenix, AZ.

**C45 Cell context-dependent roles of a cell adhesion molecule, CA DM1, in human oncogenesis.** Yoshinori Murakami<sup>1</sup>, Takeshi Ito<sup>1</sup>, Yutaka Kasai<sup>1</sup>, Yumi Tsuboi<sup>1</sup>, Mizuki Tominaga<sup>1</sup>, Tomoko Masuda<sup>1</sup>, Motoi Oba<sup>1</sup>, Akihisa Mitani<sup>2</sup>, Goh Tanaka<sup>2</sup>, Takahide Nagase<sup>2</sup>. <sup>1</sup>Division of Molecular Pathology, The Institute of Medical Science, The University of Tokyo, Tokyo, Japan, <sup>2</sup>Department 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 Kashiro<sup>1</sup>, Yutaka Naito<sup>1</sup>, Tadahaya Mizuno<sup>2</sup>, Satoshi Nara<sup>3</sup>, Susumu Hijioka<sup>4</sup>, Chigusa Morizane<sup>4</sup>, Shingo Kato<sup>5</sup>, Hiroki Ochiai<sup>6</sup>, Keiko Takeuchi<sup>7</sup>, Hiroshi Sato<sup>7</sup>, Yumiko Nomura<sup>8</sup>, Hiroshi Konishi<sup>9</sup>, Kazufumi Honda<sup>10</sup>. <sup>1</sup>Institute for Advanced Medical Sciences, Nippon Medical School, Tokyo, Japan, <sup>2</sup>Graduate School of Paratheatrical Science, University of Tokyo, Tokyo, Japan, <sup>3</sup>Department of Hepatobiliary and Pancreatic Surgery, National Cancer Center Hospital, Tokyo, Japan, <sup>4</sup>Department of Hepatobiliary and Pancreatic Oncology, National Cancer Center Hospital, Tokyo, Japan, <sup>5</sup>Department of Clinical Cancer Genomics, Yokohama City University Hospital, Kanagawa, Japan, <sup>6</sup>Department of Gastroenterological Surgery, Kitasato University Kitasato Institute Hospital, Kanagawa, Japan, <sup>7</sup>Institute for Advanced Medical Sciences, Nippon Medical School, Tokyo, Japan, <sup>8</sup>Non-Profit Organization Japan Clinical Research Support Unit, Tokyo, Japan, <sup>9</sup>Japan Cancer Society, Tokyo, Japan, <sup>10</sup>Department 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 Westbroek<sup>1</sup>, Ibifunke Pegba-Otemolu<sup>2</sup>, Olayemi Eseagwu<sup>3</sup>, Khalid Amin<sup>4</sup>, Jennifer Smith<sup>4</sup>. <sup>1</sup>Northern Lincolnshire and

Goole NHS Foundation Trust, Division of Family Services (Breast Unit), Grimsby, United Kingdom, <sup>2</sup>Northern Lincolnshire and Goole NHS Foundation Trust, Family Services (Breast Unit), Grimsby, United Kingdom, <sup>3</sup>Northern Lincolnshire and Goole NHS Foundation Trust, Department of Medicine, Grimsby, United Kingdom, <sup>4</sup>Northern 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 Hiromi<sup>1</sup>, Sugihara Rie<sup>1</sup>, Saku Shuko<sup>1</sup>, Takao Yuko<sup>1</sup>, Numata Sanae<sup>2</sup>, Sudou Tomoya<sup>2</sup>, Toh Uhi<sup>1</sup>, Akagi Yoshito<sup>1</sup>. <sup>1</sup>Kurume University Department of Surgery, Kurume, Fukuoka, Japan, <sup>2</sup>Kurume University Department of Cancer Center, Kurume, Fukuoka, Japan.

**C49 A novel molecular mechanism for liver carcinogenesis induced by laminin- $\gamma$ 2 monomer.** Nobuaki Funahashi<sup>1</sup>, Hikari Okada<sup>2</sup>, Motoharu Seiki<sup>3</sup>, Shuichi Kaneko<sup>4</sup>, Taro Yamashita<sup>4</sup>, Naohiko Koshikawa<sup>1</sup>. <sup>1</sup>Department of Life Science and Technology, Tokyo Institute of Technology, Yokohama, Japan, <sup>2</sup>Graduate School of Medical Sciences, Kanazawa University, Kanazawa, Japan, <sup>3</sup>Institute of Medical Science, University of Tokyo, Minato-ku, Japan, <sup>4</sup>Department 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 Martini<sup>1</sup>, Millicent Amankwah<sup>2</sup>, Stevens Patino<sup>2</sup>, Isra Elhussein<sup>3</sup>, Brian Stonaker<sup>2</sup>, Mumina Sadullozoda<sup>2</sup>, Julie Sahler<sup>4</sup>, Avery August<sup>4</sup>, Rick Kittles<sup>5</sup>, Clayton Yates<sup>3</sup>, Nancy Manley<sup>6</sup>, John Carpten<sup>7</sup>, Lisa Newman<sup>2</sup>, Melissa Davis<sup>2</sup>. <sup>1</sup>Weill Cornell Medical College, New York, NY, <sup>2</sup>Weill Cornell Medical College, New York, NY, <sup>3</sup>Tuskegee University, Tuskegee, AL, <sup>4</sup>Cornell University, Ithaca, NY, <sup>5</sup>City of Hope, Duarte, CA, <sup>6</sup>University of Georgia, Athens, GA, <sup>7</sup>University 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 Iwashita<sup>1</sup>, Shunsuke Ohtsuka<sup>1</sup>, Ipppei Ohnishi<sup>1</sup>, Yuto Matsushita<sup>1</sup>, Takashi Yamashita<sup>1</sup>, Keisuke Inaba<sup>2</sup>, Atsuko Fukazawa<sup>2</sup>, Hideto Ochiai<sup>2</sup>, Keigo Matsumoto<sup>2</sup>, Nobuhito Kurono<sup>1</sup>, Yoshitaka Matsushima<sup>3</sup>, Hiroki Mori<sup>4</sup>, Shioto Suzuki<sup>2</sup>, Shohachi Suzuki<sup>2</sup>, Fumihiko Tanioka<sup>2</sup>, Haruhiko Sugimura<sup>1</sup>. <sup>1</sup>Hamamatsu University School of Medicine, Hamamatsu, Japan, <sup>2</sup>Iwata City Hospital, Iwata, Japan, <sup>3</sup>Tokyo University of Agriculture, Tokyo, Japan, <sup>4</sup>Hamamatsu Medical Center, Hamamatsu, Japan.

**C53 Development-associated PIWI-interacting RNAs are reactivated in lung cancer and have prognostic implications.** Michelle E. Pewarchuk<sup>1</sup>, David E. Cohn<sup>1</sup>, Nikita Telkar<sup>2</sup>, Greg L. Stewart<sup>1</sup>, Brenda C. Minatel<sup>1</sup>, Wendy P. Robinson<sup>2</sup>, Wan L. Lam<sup>1</sup>. <sup>1</sup>BC Cancer Research

Institute, Vancouver, BC, Canada, <sup>2</sup>BC Children's Hospital Research Institute, Vancouver, BC, Canada.

**C54 Characterization and pharmacological modulation of the circadian clock machinery in head and neck squamous cell carcinoma: A potential therapeutic approach.** Petros Papagerakis, Liubov Lobanova, Silvana Papagerakis. University of Saskatchewan, Saskatoon, SK, Canada.

**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.

**C56 ERBB4/HER4 drives *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.

**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.

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

**C60 The effects of *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 Okada<sup>1</sup>, Ai Horio<sup>1</sup>, Oki Kurata<sup>1</sup>, Ibuki Kato<sup>1</sup>, Hiroyuki Nishikawa<sup>2</sup>, Ryotaro Nishi<sup>1</sup>, Kazuyoshi Yano<sup>1</sup>. <sup>1</sup>School of Bioscience and Biotechnology, Tokyo University of Technology, Tokyo, Japan, <sup>2</sup>Institute 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 Nelakurti<sup>1</sup>, Ruben C. Petreaca<sup>2</sup>, Golrokh Mirzaei<sup>3</sup>. <sup>1</sup>The Ohio State University, Columbus, OH, <sup>2</sup>The Ohio State University James Comprehensive Cancer Center, Columbus, OH, <sup>3</sup>The 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. Bhat<sup>1</sup>, Eva Malacaria<sup>2</sup>, Ludovica Di Biagi<sup>2</sup>, Mortezaali Razzaghi<sup>1</sup>, Masayoshi Honda<sup>1</sup>, Kathryn Hobbs<sup>1</sup>, Sarah Hegel<sup>3</sup>, Pietro Pichierri<sup>2</sup>, Michael Ashley Spies<sup>1</sup>, Maria Spies<sup>1</sup>. <sup>1</sup>University of Iowa, Iowa City, IA, <sup>2</sup>Istituto Superiore di Sanità, Rome, Italy, <sup>3</sup>University of Pittsburgh, Pittsburgh, PA.

**C64 Chromatin remodeling factors facilitate accurate DNA double strand break repair.** Abdulaziz B. Hamid<sup>1</sup>, Kimberly Hardison<sup>2</sup>, Renee A. Bouley<sup>2</sup>, Ruben C. Petreaca<sup>2</sup>. <sup>1</sup>Medical College, Wisconsin, Milwaukee, WI, <sup>2</sup>The Ohio State University, Marion, OH.

**C65 Phosphorylation by Abl1 mediates MLH1 regulation.** Hannah G. Daniels<sup>1</sup>, Eva M. Goellner<sup>1</sup>, Ana Thompson<sup>2</sup>, Kristin Miller<sup>1</sup>, Breanna Knicely<sup>1</sup>. <sup>1</sup>University of Kentucky, Lexington, KY, <sup>2</sup>Berea College, Berea, KY.

**C66 The *Helicobacter pylori* CagA oncoprotein inhibits DNA damage-induced apoptosis through Hippo signal activation.** Naoko Kamiya<sup>1</sup>, Takuya Ooki<sup>2</sup>, Masanori Hatakeyama<sup>2</sup>. <sup>1</sup>Hokkaido University, Sapporo, Japan, <sup>2</sup>Institute of Microbial Chemistry, Tokyo, Japan.

**C67 Chromosome-level variations shape the malignant phenotypes in gastric tumors.** Minji Jo<sup>1</sup>, Tetsuya Negoto<sup>1</sup>, Izuma Nakayama<sup>2</sup>, Kengo Takeuchi<sup>1</sup>, Hiroshi Kawachi<sup>1</sup>, Toru Hirota<sup>1</sup>. <sup>1</sup>The Cancer Institute Japanese Foundation for Cancer Research, Tokyo, Japan, <sup>2</sup>The 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 Kost<sup>1</sup>, Ali Saleh<sup>1</sup>, Shek Hei Yuan<sup>1</sup>, Bozena Kuzio<sup>1</sup>, Versha Banerji<sup>1</sup>, Spencer Gibson<sup>2</sup>, Lin Yang<sup>1</sup>, James Johnston<sup>1</sup>, Sachin Katyal<sup>3</sup>. <sup>1</sup>CancerCare Manitoba, Winnipeg, MB, Canada, <sup>2</sup>University of Alberta, Edmonton, AB, Canada, <sup>3</sup>CancerCare 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. Wang<sup>1</sup>, Mihai Truica<sup>2</sup>, Brayley Gattis<sup>1</sup>, Sarki Abdulkadir<sup>2</sup>, Nathan Gianneschi<sup>1</sup>. <sup>1</sup>Northwestern, Evanston, IL, <sup>2</sup>Northwestern, Chicago, IL.

**C72 Targeted nanoelectroporation of cancer cells using adjustable magnetoelectric nanoparticles.** Max Shotbolt<sup>1</sup>, Elric Zhang<sup>1</sup>, Skye Conlan<sup>1</sup>, Ping Liang<sup>2</sup>, Sakhrat Khizroev<sup>1</sup>. <sup>1</sup>University of Miami, Miami, FL, <sup>2</sup>Cellular Nanomed, Irvine, CA.

**C73 Cell killing effects of astatine-211-labeled trastuzumab emitting alpha-particles in preclinical gynecological tumors.** Sumitaka Hasegawa, Mayuka Anko, Huizi K. Li. National Institutes for Quantum Science and Technology, Chiba, Japan.

**C75 Decoding the spatial landscape of regulatory gene interactions in cancer with deep learning and spatial transcriptomics.** Demeter Túrós<sup>1</sup>, Alberto Valdeolivas<sup>2</sup>, Sven Rottenberg<sup>1</sup>. <sup>1</sup>University of Bern, Bern, Switzerland, <sup>2</sup>Roche 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 Wang<sup>1</sup>, Yidong Chen<sup>2</sup>, Yu-Chiao Chiu<sup>1</sup>. <sup>1</sup>University of Pittsburgh Hillman Cancer Center, Pittsburgh, PA, <sup>2</sup>University 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 Mandelkow<sup>1</sup>, Gisa Mehring<sup>2</sup>, Elena Bady<sup>1</sup>, Maximilian Lennartz<sup>1</sup>, Frank Jacobsen<sup>1</sup>, Doris Höflmayer<sup>1</sup>, Sarah Minner<sup>1</sup>, Eike Burandt<sup>1</sup>, Guido Sauter<sup>1</sup>, Markus Graefen<sup>2</sup>, Niclas C. Blessin<sup>1</sup>. <sup>1</sup>Institute of Pathology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany, <sup>2</sup>Martini-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 Tsuda<sup>1</sup>, Jun Suzuka<sup>2</sup>, Yoshitaka Oda<sup>1</sup>, Lei Wang<sup>1</sup>, Yusuke Saito<sup>1</sup>, Jian Ping Gong<sup>3</sup>, Shinya Tanaka<sup>1</sup>. <sup>1</sup>Faculty of Medicine, Hokkaido University, Sapporo, Japan, <sup>2</sup>NEXT-Ganken program, Japanese Foundation for Cancer Research, Tokyo, Japan, <sup>3</sup>Faculty 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 Ohoka<sup>1</sup>, Masanori Suzuki<sup>2</sup>, Takuya Uchida<sup>2</sup>, Genichiro Tsuji<sup>1</sup>, Yoshinori Tsukumo<sup>1</sup>, Masayuki Yoshida<sup>2</sup>, Takao Inoue<sup>1</sup>, Yosuke Demizu<sup>1</sup>, Hitoshi Ohki<sup>2</sup>, Mikihiko Naito<sup>3</sup>. <sup>1</sup>National Institute of Health Sciences, Kawasaki, Japan, <sup>2</sup>Daiichi Sankyo Co., Ltd., Tokyo, Japan, <sup>3</sup>The University of Tokyo, Tokyo, Japan.

**C81 Lineage-restricted DNA-base editing using polymer-based nanoplexes for high-grade serous ovarian cancer treatment.** Chaebin Lee<sup>1</sup>, Akshaya Chandrasekaran<sup>1</sup>, Mariam Ahmed<sup>1</sup>, Nicole Holub<sup>1</sup>, Moshe Beiser<sup>1</sup>, Kathleen Hasselblatt<sup>1</sup>, Wade Wang<sup>2</sup>, Paula T. Hammond<sup>2</sup>, Kevin M. Elias<sup>1</sup>. <sup>1</sup>Brigham and Women's Hospital, Boston, MA, <sup>2</sup>Massachusetts 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

**C84 Simulation-trained convolutional neural network to characterize breast tumor size and stiffness using ultrasound elastography data.** Francesca Abulencia, Ruth Sullivan, Zahra Ahmed, Anna Rusnak, Vikas Srivastava. Brown University, Providence, RI.

**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.

**C86 Synthesis and characterization of trastuzumab-conjugated liposomes for internalization into HER2+ inflammatory breast cancer cells.** Marienid Flores-Colon, Ginette S. Santiago-Sanchez, Pablo Vivas-Mejia. University of Puerto Rico Medical Sciences Campus, San Juan, Puerto Rico.

**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 Ramakrishnan<sup>1</sup>, Eduardo Cortes-Gomez<sup>1</sup>, Rick Kittles<sup>2</sup>, Jianmin Wang<sup>1</sup>, Kristopher Attwood<sup>1</sup>, Anna Woloszynska<sup>1</sup>. <sup>1</sup>Roswell Park Comprehensive Cancer Center, Buffalo, NY, <sup>2</sup>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. Koyanagi<sup>1</sup>, Masahiro Nakatochi<sup>2</sup>, Isao Oze<sup>1</sup>, Hadrien Charvat<sup>3</sup>, Shinichi Namba<sup>4</sup>, Akira Narita<sup>5</sup>, Takahisa Kawaguchi<sup>6</sup>, Hiroaki Ikezaki<sup>7</sup>, Asahi Hishida<sup>2</sup>, Megumi Hara<sup>8</sup>, Toshiro Takezaki<sup>9</sup>, Teruhide Koyama<sup>10</sup>, Yohko Nakamura<sup>11</sup>, Sadao Suzuki<sup>12</sup>, Sakurako Katsuura-Kamano<sup>13</sup>, Kiyonori Kuriki<sup>14</sup>, Yasuyuki Nakamura<sup>15</sup>, Kenji Takeuchi<sup>5</sup>, Atsushi Hozawa<sup>5</sup>, Kengo Kinoshita<sup>5</sup>, Yoichi Sutoh<sup>5</sup>, Kozo Tanno<sup>16</sup>, Atsushi Shimizu<sup>17</sup>, Hidemi Ito<sup>1</sup>, Yumiko Kasugai<sup>1</sup>, Yukino Kawakatsu<sup>1</sup>, Yukari Taniyama<sup>1</sup>, Masahiro Tajika<sup>1</sup>, Yasuhiro Shimizu<sup>1</sup>, Etsuji Suzuki<sup>18</sup>, Yasuyuki Hosono<sup>18</sup>, Issei Imoto<sup>1</sup>, Yasuharu Tabara<sup>19</sup>, Meiko Takahashi<sup>6</sup>, Kazuya Setoh<sup>19</sup>, Koichi Matsuda<sup>20</sup>, Shiori Nakano<sup>21</sup>, Atsushi Goto<sup>22</sup>, Ryoko Katagiri<sup>21</sup>, Taiki Yamaji<sup>21</sup>, Norie Sawada<sup>21</sup>, Shoichiro Tsugane<sup>21</sup>, Kenji Wakai<sup>2</sup>, Masayuki Yamamoto<sup>5</sup>, Makoto Sasaki<sup>17</sup>, Fumihiko Matsuda<sup>6</sup>, Yukinori Okada<sup>4</sup>, Motoki Iwasaki<sup>21</sup>, Paul Brennan<sup>23</sup>, Keitaro Matsuo<sup>1</sup>. <sup>1</sup>Aichi Cancer Center, Nagoya, Japan, <sup>2</sup>Nagoya University, Nagoya, Japan, <sup>3</sup>Juntendo University, Tokyo, Japan, <sup>4</sup>Osaka University, Osaka, Japan, <sup>5</sup>Tohoku University, Sendai, Japan, <sup>6</sup>Kyoto University, Kyoto, Japan, <sup>7</sup>Kyushu University, Fukuoka, Japan, <sup>8</sup>Saga University, Saga, Japan, <sup>9</sup>Kagoshima University, Kagoshima, Japan, <sup>10</sup>Kyoto Prefectural University of Medicine, Kyoto, Japan, <sup>11</sup>Chiba Cancer Center, Chiba, Japan, <sup>12</sup>Nagoya City University Graduate School of Medical Sciences, Nagoya, Japan, <sup>13</sup>Tokushima University Graduate School of Biomedical Sciences, Tokushima, Japan, <sup>14</sup>University of Shizuoka, Shizuoka, Japan, <sup>15</sup>Shiga University of Medical Science, Ohtsu, Japan, <sup>16</sup>Iwate Medical University, Morioka, Japan, <sup>17</sup>Iwate Medical University, Morioka, Japan, <sup>18</sup>Okayama University, Okayama, Japan, <sup>19</sup>Shizuoka Graduate University of Public Health, Shizuoka, Japan, <sup>20</sup>Tokyo University, Tokyo, Japan, <sup>21</sup>National Cancer Center, Tokyo, Japan, <sup>22</sup>Yokohama City University, Yokohama, Japan, <sup>23</sup>International Agency for Research on Cancer, Lyon, France.

**C91 The mechanism of mitochondrial dynamics regulation via PPI.** Sho Aki<sup>1</sup>, Maki Sugaya<sup>1</sup>, Ryuichi Nakahara<sup>1</sup>, Keisuke Maeda<sup>1</sup>, Sumire Nakagawa<sup>1</sup>, Rika Tsuchida<sup>1</sup>, Yusuke Hirabayashi<sup>2</sup>, Masahiro Morita<sup>3</sup>, Tsuyoshi Osawa<sup>1</sup>. <sup>1</sup>Division of Integrative Nutriomics and Oncology RCAST, The University of Tokyo, Tokyo, Japan, <sup>2</sup>Department of Chemistry and Biotechnology, School of Engineering, The University of Tokyo, Tokyo, Japan, <sup>3</sup>University of Texas Health Science Center, San Antonio, TX.