
A02  Utilizing novel oncolytic vaccinia virus for selective expression of immunotherapeutic payloads in metastatic tumors. Adrian Pelin. Ottawa Hospital Research Institute, Ottawa, ON, Canada.

A03  Relieving immune suppressive pathways in breast cancer to improve outcomes. Amanda Poissonnier. Cell, Developmental & Cancer Biology, Oregon Health & Science University, Portland, OR.

A04  Heterogenous activation of multiple suppressive pathways by scRNAseq may underscore resistance to PD-1 therapy in metastatic castration-resistant prostate cancer. Amy Moran. Department of Cell, Developmental & Cancer Biology, Oregon Health and Science University, School of Medicine Division of Hematology and Oncology, Portland, OR.

A05  Pharmacodynamics of immune checkpoint blockade therapy indicate drivers of response. Catherine S. Grasso. University of California, Los Angeles, Los Angeles, CA.

A06  Direct and indirect effects of low-dose radiation on Tregs and antitumor efficacy among diverse tumor models. Charlie Garnett-Benson. Georgia State University, Atlanta, GA.

A07  Assessment of concordance among 22C3, SP263, and SP142 immunohistochemistry assay for PD-L1 expression in non-small cell lung cancer. Chi Young Jung. Daegu Catholic University Medical Center, Daegu, Republic of Korea.

A08  Adenovirus coding for TNF-α and IL-2 proteins mediates abscopal effect in mice receiving anti-PD1 immunotherapy. Dafne C.A. Quixabeira. Cancer Gene Therapy Group, Department of Oncology, Faculty of Medicine, University of Helsinki, Helsinki, Finland.

A09  Computational modeling analysis of the tumor response to anti-PD-1 immunotherapy. Damijan Valentinuzzi. Jozef Stefan Institute, Ljubljana, Slovenia.


Combining the immunophenotyping of MDSCs and lymphocytes with artificial intelligence (AI) to predict early-stage breast cancer. George A. Dominguez. Anixa Biosciences, San Jose, CA.

Implication of immune cell composition in biopsy specimens of triple-negative breast cancer for responsiveness to neoadjuvant chemotherapy. In Ah Park. Department of Pathology, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Republic of Korea.

Irreversible electroporation is an “in situ vaccine” and induces antitumor immune responses in pancreatic cancer. Jayanth S. Shankara Narayanan. UCSD, La Jolla, CA.

Rewiring the tumor microenvironment with an oncolytic virus to enhance and support tumor-infiltrating lymphocytes for ovarian cancer immunotherapy. João Manuel Santos. TILT Biotherapeutics Ltd, Helsinki, Finland.

Metformin is a potential nontoxic adjuvant to enhance the efficacy of non-PDL1/PD-1 targeting immune therapies. Jong-Ho Cha. Department of Molecular and Cellular Oncology, University of Texas MD Anderson Cancer Center, Houston, TX.


A novel combination immunotherapy with a vaccine targeting tumor neoepitopes that mediates immune cascade in murine tumor models. Karin L. Lee. Laboratory of Tumor Immunology and Biology, Center for Cancer Research, National Cancer Institute, National Institutes of Health, Bethesda, MD.

Metronomic chemotherapy enhances immunotherapy by preventing stroma-induced immunosuppression. Kelvin K. Tsai. Taipei Medical University, Taipei City, Taiwan.

Enhancing checkpoint inhibitor therapy with ultrasound stimulated microbubbles. David E. Goertz. Sunnybrook Research Institute, Toronto, ON, Canada.

Engineering antigen-specific natural killer cells against the melanoma-associated antigen tyrosinase via TCR gene transfer. Adil D. Duru. Nova Southeastern University, Fort Lauderdale, FL.

Cervical cancer immunomodulation through stat3 and p65 NFkB: Effects beyond the tumor microenvironment. Ana Paula Lepique. Instituto de Ciências Biomédicas, USP, Sao Paulo, Brazil.

Identification of prevalent targets for the development of tailored sarcoma immunotherapies using a rapid clinic-to-bench immunoprofiling pipeline. Anna-Maria Georgoudaki. Karolinska Institutet/Nova Southeastern University, Ft. Lauderdale, FL.

Antigen-targeted soluble bispecific T-cell receptor (ImmTAC™) molecules in immunotherapy. Annelise Vuidepot. Immunocore, Abingdon, Oxfordshire, United Kingdom.

Hectd3 protects against colitis and colon cancer development through maintenance of homeostatic immune environment in the gut. Ashley Zuniga. University of Florida, Gainesville, FL.
A26 Immune profiling and organoids generation of a rare case of prostate cancer liver metastasis. Aurélie Y. Le Page. Division of Urology, Department of Surgery, McGill University, Research Institute of the McGill University Health Centre, Montreal, QC, Canada.

A27 Endothelial progenitor cells as drug-delivery Trojan horses for treatment and imaging of cancer. Barbara Muz. Washington University in St. Louis, St. Louis, MO.

A28 IL-35+ B cells establish immunosuppressive network in pancreatic ductal adenocarcinoma. Bhalchandra Mirlekar. The Lineberger Comprehensive Cancer Center, University of North Carolina at Chapel Hill, Chapel Hill, NC.


A30 Molecular insight into pathogen-associated molecular pattern signaling during TNFa and IL2 armed oncolytic adenovirus treatments. Camilla Heiniö. University of Helsinki, Helsinki, Finland.

A31 Comparing IL-12 and IL-18 secreting CAR T-cell efficacy. Christina E. Bebernitz. Memorial Sloan Kettering Cancer Center, New York, NY.

A32 The SUV39H1-H3K9me3 pathway represses cytotoxic T lymphocyte effector expression to confer colon carcinoma immune escape. Chunwan Lu. Medical College of Georgia, Augusta, GA.

A33 The next-generation BET inhibitor, PLX51107, delays melanoma growth, altering the tumor immune microenvironment via Cox2 inhibition. Dan A. Erkes. Thomas Jefferson University, Philadelphia, PA.

A34 Combined focal radiation and anti-mCTLA-4 antibody therapy modulates myeloid subset phospho-STAT3 levels in the 4T1 tumor microenvironment and results in tumor growth inhibition. David Draper. MI Bioresearch, Ann Arbor, MI.

A35 RNA aptamers specific for tumor-infiltrating myeloid cells. Dimitri Van Simaeys. Department of Microbiology and Immunology, Sylvester Cancer Center, Miami, FL.


A37 Engineering armored TCR-modified T cells to enhance anti-tumor efficacy. Dylan J. Drakes. Weill Cornell Graduate School of Medical Sciences, New York, NY.

A38 Oncogenes drive production of immunosuppressive cytokines to facilitate lung cancer progression. Elizabeth Franks. BC Cancer, Vancouver, BC, Canada.

A39 Inflammatory macrophage derived TNF alpha induces downregulation of estrogen receptor alpha in breast cancer cells by inactivation of Foxo3A. Frida Björk Gunnarsdottir. Lund University, Malmö, Sweden.

A41  Antitumor reactivity of human breast tumor-infiltrating lymphocytes (TILs). Heejae Lee. University of Ulsan College of Medicine, Seoul, South Korea.

A42  Making immunologically cold tumors hot: The benign oncogene USP6 inhibits Ewing sarcoma growth through dysregulated interferon signaling. Ian C. Henrich. Children’s Hospital of Philadelphia/Perelman School of Medicine, Philadelphia, PA.

A43  Identifying a role for Ntrk1 in regulating immune functionality and checkpoint blockade resistance in Kras/p53 mutant lung cancer. Jessica Konen. University of Texas MD Anderson Cancer Center, Houston, TX.

A44  High-efficiency electroporation of nonexpanded T cells and NK cells for CAR-T and CAR-NK. Jian Chen. Celetrix LLC, Manassas, VA.


A47  The immunoproteosome mediates resistance to natural killer cell killing. Joyce Pasion. Weill Cornell Medicine, New York, NY.

A48  A novel NK cell-targeted therapeutic strategy against pancreatic cancer. Kamiya Mehla. University of Nebraska Medical Center, Omaha, NE.

A49  A dual blockade of N-CoR2- and immune checkpoints induces complete remissions in treatment-refractory tumors. Kelvin Tsai. Stempodia Therapeutics, Hillsborough, CA.

A50  Interleukin-33 increases ST2+ regulatory T cells and promotes metastatic tumor growth in the lungs in an amphiregulin-dependent manner. Kevin L. Bennewith. BC Cancer, Vancouver, BC, Canada.

A51  Rationally improving T cell-mediated cancer immunotherapies using Sleeping Beauty mutagenesis to identify novel therapeutic targets. Laura M. Rogers. University of Iowa, Iowa City, IA.

A52  Novel CAR T for solid tumors targets transmembrane cleavage product, called MUC1*, not full-length MUC1. Cynthia C. Bamdad. Minerva Biotechnologies, Waltham, MA.

A53  Epigenetic activated IL1B promotes tumor progression of tongue cancer. Dali Zheng. School and Hospital of Stomatology, Fujian Medical University, Fuzhou, China.

A54  Natural killer cells genetically modified to overexpress DNAM-1 exert enhanced antitumor responses against CD112/CD155+ sarcomas and other malignancies. Ece C. Sayitoglu. Nova Southeastern University, Fort Lauderdale, FL.

A55  Alteration of tumor metabolism by antitumor CD4+ T cells leads to tumor rejection. Gang Zhou. Augusta University, Augusta, GA.

A56  Blockade of AHR activation by IDO/TDO-derived kynurenine restricts cancer immune suppression. Luis F. Campesato. Memorial Sloan Kettering Cancer Center, New York, NY.
A58 Collagen scavenging alters macrophage phenotype in pancreatic cancer. Madeleine M. LaRue. New York University Medical Center, New York, NY.

A59 Targeting the glutamine dependent hexosamine biosynthesis pathway sensitizes pancreatic tumors to anti-PD1 therapy. Nikita S. Sharma. University of Miami, Miami, FL.

A60 Targeted disruption of PI3K/Akt/mTOR signaling pathway induces cell cycle arrest, apoptosis, and autophagy, and inhibits inflammation, invasion and angiogenesis of OSCC cells. Sadhna Aggarwal. AIIMS, Delhi, India.


A64 Commensal dysbiosis alters the tumor microenvironment in breast cancer and diminishes efficacy of PD-L1 blockade. Claire Buchta Rosean. University of Virginia, Charlottesville, VA.

A65 Leveraging gut microbiota networks to impact tumor immunotherapy. Lata Jayaraman. Seres Therapeutics, Cambridge, MA.

A66 Bacteroides fragilis toxin induces epithelial-to-mesenchymal transition and stem-like phenotype in breast epithelial cells and concomitantly activates Notch1 and βcatenin axes. Sheetal Parida. Department of Oncology, Sidney Kimmel Comprehensive Cancer Center, Johns Hopkins University School of Medicine, Baltimore, MD.

A67 Microbial polyamines and early detection of pancreatic cancer. Santanu Banerjee. University of Miami, Miami, FL.


A69 Elucidating the cell type-specific mechanisms of the Ron receptor in the prostate tumor microenvironment. Camille Sullivan. University of Cincinnati College of Medicine, Cincinnati, OH.

A70 IFN-III is selectively produced by cDC1 and predicts good clinical outcome in human breast cancer. Jenny Valladeau-Guillemomd. CRCL INSERM1052 CNRS5286, Lyon, France.


A73  Human granulocytic myeloid-derived suppressor cells (G-MDSCs) in metastatic breast cancer patients is a heterogeneous population with angiogenic potential in vivo. Meliha Mehmeti. Department of Translational Medicine, Cancer Immunology, Lund University, Malmö, Sweden.

A74  Cytomegalovirus infection of melanoma delays tumor growth by recruiting and altering monocytic phagocytes in the tumor. Nicole A. Wilski. Department of Microbiology and Immunology, Sidney Kimmel Cancer Center, Thomas Jefferson University, Philadelphia, PA.


A76  Anti IL-1b as a cancer immunotherapy. Reshma Singh. Novartis Institutes for BioMedical Research, Cambridge, MA.


A78  IFNg-activated lymphatic vessels express PD-L1 and suppress effector T-cell function in melanoma. Ryan S. Lane. Oregon Health & Science University, Portland, OR.

A79  Myeloid-lymphatic endothelial progenitors significantly contribute to lymph node metastasis in clinical breast cancer. Sophia Ran. Southern Illinois University School of Medicine, Springfield, IL.

A80  The effects of CCL3 on dendritic cell migration and immune cell activation. Teilo H. Schaller. Duke University Medical Center, Durham, NC.

A81  Hyaluronan-dependent skewing of tumor-associated macrophage (TAM) phenotype in a murine pancreatic tumor model is associated with increased tumor hypoxia. Trevor Kimbler. Halozyme Therapeutics, Inc., San Diego, CA.

A82  Immune checkpoint protein VISTA controls antitumor immunity via regulating Toll-like receptor signaling and myeloid cells-mediated inflammation. Wenwen Xu. Medical College of Wisconsin, Milwaukee, WI.

A83  In vitro and In vivo antitumor activity of immune suppressant FTY720. Zuoquan Xie. Shanghai Institute of Materia Medica, Shanghai, China.

A84  B7-H3 promotes antitumor T-cell suppression via MDSCs in colorectal cancer. Asha Jayakumar. Yale University, New Haven, CT.

A85  The role of LAP positive immune cells in cancer. Galina Gabriely. Ann Romney Center for Neurologic Diseases, Evergrande Center for Immunologic Diseases, Brigham and Women's Hospital, Harvard Medical School, Boston, MA.

A86  PI3Kγ inhibition activates T cell memory and relieves T cell exhaustion. Hideyuki Takahashi. Moores Cancer Center, University of California San Diego, San Diego, CA.
Acetaminophen pretreatment stimulated interferon γ-induced PD-L1 protein expression in vitro and CD68 positive macrophage infiltration in tumor xenograft. Jeffrey Wu. Oregon Health and Sciences University, Portland, OR.

Targeting CD47 as a novel immunotherapy for multiple myeloma. Jennifer Sun. Washington University in St. Louis, St. Louis, MO.


A novel immunomodulatory strategy of targeting glyco-immune checkpoints using EAGLE technology to treat cancer. Li Peng. Palleon Pharmaceuticals, Waltham, MA.

Assessing the T-cell exhaustion status of TCR discovery outputs. Paraskevi Mallini. Immunocore Ltd., Abingdon, Oxfordshire, United Kingdom.

Development of blocking antibodies to human CD47 with lower side effects on RBCs and platelets. Richard Zhang. Accurus Biosciences, Richmond, CA.

Identification of potent, insurmountable A2a antagonists for modulation of the tumor microenvironment. Roy Pettipher. AdoRx Therapeutics, Edinburgh, United Kingdom.

A genome-wide CRISPR screen identifies novel ligands for the Siglec family of glyco-immune checkpoint receptors. Simon Wisnovsky. Stanford University, Stanford, CA.

Antigen-specific human CD4+ T cell clones as tools to characterize immunomodulatory receptor antibodies for immunotherapy. Sophie (Ying) Li. Merck & Co, Palo Alto, CA.

The inhibitory receptor NKG2A acts as a checkpoint on CD8 T cells in the context of cancer vaccines. Thorbald van Hall. Department of Medical Oncology, Leiden University Medical Center, Leiden, Netherlands.

Molecular dynamics study of pH-dependent interactions between immune checkpoint receptor PD-1 and PD-L1. Vitaly Alexandrov. University of Nebraska-Lincoln, Lincoln, NE.

Management of advanced melanoma: improved survival and barriers to access in a national cohort following the approvals of checkpoint blockade immunotherapies and targeted therapies. Bryan Iorgulescu. Dana-Farber Cancer Institute, Boston, USA.