1923 Highlights from Recent Cancer Literature

REVIEWS

1925 Advanced Glycation End-Products: A Biological Consequence of Lifestyle Contributing to Cancer Disparity
David P. Turner

1930 Genome Medicine in Cancer: What’s in a Name?
Anne F. Schott, Charles M. Perou, and Daniel F. Hayes

PRIORITIES REPORTS

1936 Manic Fringe Promotes a Claudin-Low Breast Cancer Phenotype through Notch-Mediated PIK3CG Induction
Shubing Zhang, Wen-Cheng Chung, Guanming Wu, Sean E. Egan, Lucio Miele, and Keli Xu
Précis: These results define a glucosylpeptide transferase as an oncogene in an aggressive subtype of breast cancer, with mechanistic insights offering a preclinical justification to block PI3K-γ as a treatment strategy in this setting.

1944 PLZF, a Tumor Suppressor Genetically Lost in Metastatic Castration-Resistant Prostate Cancer, Is a Mediator of Resistance to Androgen Deprivation Therapy
Chen-Lin Hsieh, Ginevra Botta, Shuai Gao, Tiantian Li, Eliezer M. Van Allen, Daniel J. Treacy, Changmeng Cai, Housheng Hansen He, Christopher J. Sweeney, Changmeng Cai, Michael B. Rose, Peter L. Farnham, Michael J. Glick, and Yifan Liu
Précis: This study interrogates an androgen responsive tumor suppressor gene whose loss of expression is associated with a new molecular subset of prostate cancer that participates in resistance to androgen deprivation therapy.

INTEGRATED SYSTEMS AND TECHNOLOGIES

1949 A Chemical Genetics Approach for the Functional Assessment of Novel Cancer Genes
Qianhe Zhou, Adnan Derti, David Ruddy, Daniel Rakiec, Iris Kao, Michelle Lira, Veronica Gamba, HoMan Chan, Yi Yang, Junxia Min, Michael R. Schlabach, and Frank Stegmeier
Précis: The Dsg-KI method represents a new approach to study the function of cancer genes that is able to better mimic the effects of small molecule inhibitors than current genetic approaches.

MICROENVIRONMENT AND IMMUNOLOGY

1959 TLR5 Ligand-Secreting T Cells Reshape the Tumor Microenvironment and Enhance Antitumor Activity
Degui Geng, Sabina Kaczanowska, Alexander Tsai, Renisha Younger, Augusto Ochoa, Aaron P. Rapoport, Sue Ostrand-Rosenberg, and Eduardo Davila
Précis: These findings suggest that T cells engineered for use in adoptive T-cell immunotherapy can be further engineered to deliver TLR5 ligands that reshape the tumor environment to enhance antitumor efficacy.

1972 Paracrine WNT5A Signaling Inhibits Expansion of Tumor-Initiating Cells
Nicholas Borrowding, David Kusner, Ryan Kolb, Qing Xie, Wei Li, Fang Yuan, Gabriel Velez, Ryan Askeland, Donald J. Weigel, and Weizhou Zhang
Précis: These results identify a novel tumor-suppressive signaling event that controls cancer progression and metastasis by limiting the expansion of tumor-initiating cells.

1983 Identification of Rare High-Avidity, Tumor-Reactive CD8⁺ T Cells by Monomeric TCR-Ligand Off-Rates Measurements on Living Cells
Michael Hebeisen, Julien Schmidt, Philippe Guillaume, Petra Baumgartner, Daniel E. Speiser, Immanuel Luescher, and Nathalie Rufer
Précis: This study reports a novel peptide technology to readily isolate those rare high-avidity tumor-specific cytotoxic T cells from cancer patients that offer the greatest interest for use in adoptive cell therapies for treatment.

MOLECULAR AND CELLULAR PATHOBIOLOGY

1992 The Endogenous Cell Fate Factor Dachshund Restraints Prostate Epithelial Cell Migration via Repression of Cytokine Secretion via a CXCL Signaling Module
Ke Chen, Kongming Wu, Xuanmao Jiao, Liping Wang, Xiaoming Ju, Min Wang, Gabriele Di Sanse, Shaoxue Hu, Qionh Wang, Kevin Li, Xin Sun, Congwen Xu, Zhiping Li, Matthew C. Castillo, Adam Ertel, Sankar Addya, Peter A. McGuire, Michael P. Lisanti, Chenghuang Wang, Richard J. Davis, Graeme Mardon, and Richard G. Pestell
Précis: These findings show how a cell fate determination factor that functions in normal development acts to inhibit the growth of androgen therapy-resistant prostate cancer.
Decoy Receptor DcR1 Is Induced in a p50/2039
CDK2 Inhibition Causes Anaphase
Carnosomal Protein CP110
Decoy Receptor DcR1 Is Induced in a p50/
Decoy Receptor DcR1 Is Induced in a p50/2029
This study describes how CDK2 inhibitors
2061
Pharmacological Inhibition of KIT Activates
2071
Metabolic Signature Identifies Novel Targets for
2049
Nitrosoerylene Derivatives Act as RXR Ligands to
2083
MMP16 Mediates a Proteolytic Switch to

Tenascin-C Protects Cancer Stem–like Cells from Immune Surveillance by Arresting T-cell Activation
Elena Jachetti, Sara Caputo, Stefania Mazzenoli, Chiara Svetlana Brambillasca, Sara Martina Parigi, Matteo Grioni, Ignazio Stefano Piras, Umberto Restuccia, Arianna Calcino, Massimo Freschi, Angela Bach, Rossella Galli, and Matteo Bellone

Précis: These results shed light on how early-disseminating cancer stem-like cells seed quiescent future sites of metastasis in tumor-draining lymph nodes by engaging a protumorigenic extracellular matrix protein that mediates local immune escape.

Development of Resistance to EGFR-Targeted Therapy in Malignant Glioma Can Occur through EGFR-Dependent and -Independent Mechanisms
Stefan Klingler, Baofeng Guo, Jun Yao, Haiyan Yan, Ling Zhang, Angelina V. Vaseva, Sida Chen, Peter Canoll, James W. Horner, Y. Alan Wang, Ji-Hye Paik, Haoqiang Ying, and Hongwu Zheng

Précis: These findings provide mechanistic insight into EGFR drug resistance in glioma and offer a platform to test therapies targeting aberrant EGFR signaling in this setting.

Chronic Inflammation Induces a Novel Epigenetic Program That Is Conserved in Intestinal Adenomas and in Colorectal Cancer
Monther Abu-Remaileh, Sebastian Bender, Günther Raddatz, Ihab Ansari, Daphne Cohen, Julian Gutekunst, Tanja Musch, Heinz Linhart, Achim Beelting, Eli Pikarsky, Yehudit Bergman, and Frank Lyko

Précis: These findings showing how an altered epigenetic program links inflammation to colon cancer strongly reinforce the concept that the microenvironment dictates the development and maintenance of malignant characters.

Pelvic lymph nodes are the most frequent sites of prostate cancer dissemination, as depicted here by pan-cytokeratin immunohistochemistry on a human specimen. However, there is little knowledge about how precociously disseminated cancer cells seed lymph nodes and protect themselves from immune surveillance. Jachetti and colleagues report that early-disseminating cancer stem-like cells seed quiescent future sites of metastasis in tumor-draining lymph nodes by engaging Tenascin-C, a protumorigenic extracellular matrix protein, which mediates local immune escape by arresting T lymphocyte activation. For details, see article by Jachetti and colleagues on page 2095.