

BREAKING ADVANCES

- 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

PRIORITY 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, Myles Brown, Steven P. Balk, Peter S. Nelson, Levi A. Garraway, and Philip W. Kantoff
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 Gibaja, HoMan Chan, Yi Yang, Junxia Min, Michael R. Schlabach, and Frank Stegmeier
Précis: The Degron-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, Kenisha 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 Borcherding, David Kusner, Ryan Kolb, Qing Xie, Wei Li, Fang Yuan, Gabriel Velez, Ryan Askeland, Ronald 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 Baumgaertner, 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 Restrains 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 Sante, Shaohua Xu, Qiong Wang, Kevin Li, Xin Sun, Congwen Xu, Zhiping Li, Mathew C. Casimiro, Adam Ertel, Sankar Addya, Peter A. McCue, Michael P. Lisanti, Chenguang 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.

Table of Contents

2005 IDH2 and NPM1 Mutations Cooperate to Activate Hoxa9/Meis1 and Hypoxia Pathways in Acute Myeloid Leukemia

Yoko Ogawara, Takuo Katsumoto, Yukiko Aikawa, Yutaka Shima, Yuki Kagiyama, Tomoyoshi Soga, Hironori Matsunaga, Takahiko Seki, Kazushi Araki, and Issay Kitabayashi

Précis: These results show that IDH2 mutation is critical for the development and maintenance of stem-like cells in acute myeloid leukemia and offer a preclinical rationale to target mutant IDH enzymes as a strategy for therapy in this setting.

2017 Oncogenic HRAS Activates Epithelial-to-Mesenchymal Transition and Confers Stemness to p53-Deficient Urothelial Cells to Drive Muscle Invasion of Basal Subtype Carcinomas

Feng He, Jonathan Melamed, Moon-shong Tang, Chuanshu Huang, and Xue-Ru Wu

Précis: Multiple lines of experimental evidence establish a genetic synergism between receptor tyrosine kinase/RAS pathway activation and p53 inactivation as drivers in the malignant progression of bladder cancer.

THERAPEUTICS, TARGETS, AND CHEMICAL BIOLOGY

2029 CDK2 Inhibition Causes Anaphase Catastrophe in Lung Cancer through the Centrosomal Protein CP110



Shanhu Hu, Alexey V. Danilov, Kristina Godek, Bernardo Orr, Laura J. Tafe, Jaime Rodriguez-Canales, Carmen Behrens, Barbara Mino, Cesar A. Moran, Vincent A. Memoli, Lisa Maria Mustachio, Fabrizio Galimberti, Saranya Ravi, Andrew DeCastro, Yun Lu, David Sekula, Angeline S. Andrew, Ignacio I. Wistuba, Sarah Freemantle, Duane A. Compton, and Ethan Dmitrovsky

Précis: This study describes how CDK2 inhibitors preferentially target KRAS mutant lung cancer cells that are genetically unstable, a disease type relatively resistant to other chemotherapeutic strategies.

2039 Decoy Receptor DcR1 Is Induced in a p50/Bcl3-Dependent Manner and Attenuates the Efficacy of Temozolomide

Nassir M. Mansour, Giovanna M. Bernal, Longtao Wu, Clayton D. Crawley, Kirk E. Cahill, David J. Voce, Irina V. Balyasnikova, Wei Zhang, Ruben Spretz, Luis Nunez, Gustavo F. Larsen, Ralph R. Weichselbaum, and Bakhtiar Yamini

Précis: Upregulation of a Fas/TNF/TRAIL-related decoy receptor by a cytotoxic drug used widely to treat deadly brain tumors was found to limit drug efficacy, providing a rationale to target this receptor as a drug sensitization strategy.

2049 Nitrostyrene Derivatives Act as RXR α Ligands to Inhibit TNF α Activation of NF- κ B

Zhiping Zeng, Zhe Sun, Mingfeng Huang, Weidong Zhang, Jie Liu, Liqun Chen, Fan Chen, Yuqi Zhou, Jiacheng Lin, Fengyu Huang, Lin Xu, Zixing Zhuang, Shangjie Guo, Gulimiran Alitongbieke, Guobin Xie, Yang Xu, Bingzhen Lin, Xihua Cao, Ying Su, Xiao-kun Zhang, and Hu Zhou

Précis: These results communicate a new class of small molecule modulators of RXR α that induces apoptosis of cancer cells through a unique binding mode and novel mechanism of action.

2061 Pharmacological Inhibition of KIT Activates MET Signaling in Gastrointestinal Stromal Tumors



Noah A. Cohen, Shan Zeng, Adrian M. Seifert, Teresa S. Kim, Eric C. Sorenson, Jonathan B. Greer, Michael J. Beckman, Juan A. Santamaria-Barria, Megan H. Crawley, Benjamin L. Green, Ferdinand Rossi, Peter Besmer, Cristina R. Antonescu, and Ronald P. DeMatteo

Précis: These findings offer a preclinical rationale to immediately reposition the MET kinase inhibitor cabozantinib for clinical evaluation in treatment of gastrointestinal stromal tumors that are either sensitive or resistant to imatinib, the kinase inhibitor used to treat this type of sarcoma.

2071 Metabolic Signature Identifies Novel Targets for Drug Resistance in Multiple Myeloma

Patricia Maiso, Daisy Huynh, Michele Moschetta, Antonio Sacco, Yosra Aljawai, Yuji Mishima, John M. Asara, Aldo M. Roccaro, Alec C. Kimmelman, and Irene M. Ghobrial

Précis: Inhibitors of lactate dehydrogenase may be beneficial to block the growth and intrinsic drug resistance of multiple myeloma, still one of the deadliest blood tumors.

TUMOR AND STEM CELL BIOLOGY

2083 MMP16 Mediates a Proteolytic Switch to Promote Cell-Cell Adhesion, Collagen Alignment, and Lymphatic Invasion in Melanoma

Olga Tatti, Erika Gucciardo, Pirita Pekkonen, Tanja Holopainen, Riku Louhimo, Pauliina Repo, Pilvi Maliniemi, Jouko Lohi, Ville Rantanen, Sampsa Hautaniemi, Kari Alitalo, Annamari Ranki, Päivi M. Ojala, Jorma Keski-Oja, and Kaisa Lehti

Précis: This study delineates a novel mechanism behind melanoma progression and reveals MMP16 as a prognostic marker candidate that could also guide diagnostic and therapeutic decisions in melanoma.

Table of Contents

2095 Tenascin-C Protects Cancer Stem-like Cells from Immune Surveillance by Arresting T-cell Activation

Elena Jachetti, Sara Caputo, Stefania Mazzoleni, Chiara Svetlana Brambillasca, Sara Martina Parigi, Matteo Grioni, Ignazio Stefano Piras, Umberto Restuccia, Arianna Calcinotto, Massimo Freschi, Angela Bachi, 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.

2109 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.

2120 Chronic Inflammation Induces a Novel Epigenetic Program That Is Conserved in Intestinal Adenomas and in Colorectal Cancer

Monther Abu-Remaileh, Sebastian Bender, Günter Raddatz, Ihab Ansari, Daphne Cohen, Julian Gutekunst, Tanja Musch, Heinz Linhart, Achim Breiling, Eli Pikarsky, Yehudit Bergman, and Frank Lyko

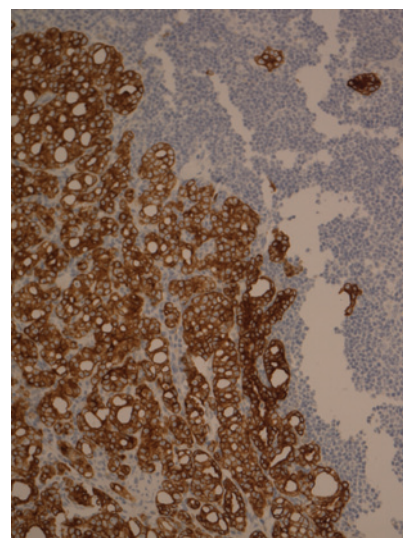
Précis: These findings showing how an altered epigenetic program links inflammation to colon cancer strongly reinforce the concept that the microenvironment dictates the development and maintenance of malignant characters.

 AC icon indicates Author Choice

For more information please visit www.aacrjournals.org

ABOUT THE COVER

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.



Cancer Research

The Journal of Cancer Research (1916–1930) | The American Journal of Cancer (1931–1940)

75 (10)

Cancer Res 2015;75:1923-2130.

| | |
|------------------------|---|
| Updated version | Access the most recent version of this article at: http://cancerres.aacrjournals.org/content/75/10 |
|------------------------|---|

| | |
|----------------------|--|
| E-mail alerts | Sign up to receive free email-alerts related to this article or journal. |
|----------------------|--|

| | |
|-----------------------------------|--|
| Reprints and Subscriptions | To order reprints of this article or to subscribe to the journal, contact the AACR Publications Department at pubs@aacr.org . |
|-----------------------------------|--|

| | |
|--------------------|--|
| Permissions | To request permission to re-use all or part of this article, use this link http://cancerres.aacrjournals.org/content/75/10 . Click on "Request Permissions" which will take you to the Copyright Clearance Center's (CCC) Rightslink site. |
|--------------------|--|