**Breaking Advances**

4595 Highlights from Recent Cancer Literature

**Obituary**

4597 Emil Frei III, MD: In Memoriam (1924–2013)

**Reviews**

4599 A Road Map to Comprehensive Androgen Receptor Axis Targeting for Castration-Resistant Prostate Cancer

4606 Myeloid-Derived Suppressor Cells as Osteoclast Progenitors: A Novel Target for Controlling Osteolytic Bone Metastasis

**Perspective**

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4616 Quantitative In Vivo Characterization of Intracellular and Extracellular pH Profiles in Heterogeneous Tumors: A Novel Method Enabling Multiparametric pH Analysis

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4641 Vaccine-Instructed Intratumoral IFN-γ Enables Regression of Autochthonous Mouse Prostate Cancer in Allogeneic T-Cell Transplantation

4653 IL-18–Primed Helper NK Cells Collaborate with Dendritic Cells to Promote Recruitment of Effector CD8⁺ T Cells to the Tumor Microenvironment

4663 Potent Immunomodulatory Effects of the Trifunctional Antibody Catumaxomab

**Contents**
Histone Demethylase RBP2 Promotes Lung Tumorigenesis and Cancer Metastasis

Yu-Ching Teng, Cheng-Feng Lee, Ying-Shiuau Li, Yi-Ren Chen, Pei-Wen Hsiao, Meng-Yu Chan, Feng-Mao Lin, Hsien-Da Huang, Yen-Ting Chen, Yang-Ming Jeng, Chih-Hung Hsu, Qin Yan, Ming-Daw Tsai, and Li-Jung Juan

 précis: Findings establish an oncogenic function in lungs for an Rb binding protein that modifies chromatin, with implications for malignant progression in this tissue.
A 20-Year Prospective Study of Plasma Prolactin as a Risk Marker of Breast Cancer Development
Shelley S. Tworoger, A. Heather Eliassen, Yvonne Ye, John D. Minna, and Xifeng Wu

**Precise**: Elevated levels of plasma prolactin are associated with an increased risk of breast cancer, but only for 10 years after assessment of this risk marker, supporting a role for prolactin at later stages in breast carcinogenesis.

**Novel Recombinant Human B7–H4 Antibodies Overcome Tumoral Immune Escape to Potentiate T-Cell Antitumor Responses**
Denarda Dangaj, Evripidis Lanitis, Aiizhi Zhao, Shree Joshi, Yi Cheng, Raphael Sandalozopoulos, Hyun-Jeong Ra, Gwenn Danet-Desnoyers, Daniel J. Powell, Jr, and Nathalie Scholler

**Precise**: Blockade of inhibitory T-cell receptor signals in the same general family as the CTLA-4 molecule targeted by ipilimumab (Yervoy) may offer a paradigm for simultaneous targeting of not only tumor cells, but also tumor-associated macrophages that drive immune escape.
**TUMOR AND STEM CELL BIOLOGY**

**4872**

*LIN28 Expression in Malignant Germ Cell Tumors Downregulates let-7 and Increases Oncogene Levels*

**Précis:** This study defines a common oncogenic pathway in malignant germ cell tumors (GCT) and offers preclinical initial proof of concept for its targeting potential in this setting.

**4885**

*A Renewable Tissue Resource of Phenotypically Stable, Biologically and Ethnically Diverse, Patient-Derived Human Breast Cancer Xenograft Models*
Xiaomei Zhang, Sofie Claerhout, Aleix Pratt, Lacey E. Dobrolecki, Ivana Petrovic, Qing Lai, Melissa D. Landis, Lisa Wiechmann, Rachel Schiff, Mario Giuliano, Helen Wong, Suzanne W. Fuqua, Alejandro Contreras, Carolina Gutierrez, Jian Huang, Su Feng Mao, Anne C. Pavlick, Anna Tsimelzon, Susan G. Hilsenbeck, Edward S. Chen, Pavel Zuloaga, Chad A. Shaw, Michael T. Lewis

**Précis:** This well-characterized collection of human breast cancer xenografts will serve as a foundation for conduct of "animal clinical trials" to evaluate experimental therapeutics, as well as a resource for mechanistic studies of treatment resistance and metastasis.

**4898**

*eIF4B Phosphorylation by Pim Kinases Plays a Critical Role in Cellular Transformation by Abi Oncogenes*
Jianling Yang, Jun Wang, Ke Chen, Guijie Gao, Ruijiao Xi, Paul R. Rothman, Douglas Whitten, Lianfeng Zhang, Shile Huang, and Ji-Long Chen

**Précis:** Results identify the translation initiation factor eIF-4B as a critical substrate of Pim kinases, which mediate the activity of Abi oncogenes, suggesting this factor as a candidate therapeutic target in Abi-induced cancers.

**4909**

*Canonical Wnt Signaling Is Required for Pancreatic Carcinogenesis*
Yaqing Zhang, John P. Morris IV, Wei Yan, Heather K. Schofield, Austin Garrney, Diane M. Simeone, Sarah E. Millar, Timothy Hoey, Matthias Hebrok, and Marina Pasca di Magliano

**Précis:** This study establishes a causal role for WNT pathway signaling in the development and progression of K-ras-initiated pancreatic cancers, with therapeutic implications for the use of WNT pathway antagonists in this deadly disease.

**4923**

*Aptamer Identification of Brain Tumor–Initiating Cells*
Youngmi Kim, Qulian Wu, Petra Hamerlik, Masahiro Hitomi, Andrew E. Sloan, Gene H. Barnett, Robert J. Weil, Patrick Leahy, Anita B. Hjelmeland, and Jeremy N. Rich

**Précis:** This work illustrates a general method to prospectively isolate tumor-initiating cells, the imaging and targeting of which may be important for improving therapeutic outcomes in individual patients.

**4937**

*Loss of p120-Catenin Induces Metastatic Progression of Breast Cancer by Inducing Anoikis Resistance and Augmenting Growth Factor Receptor Signaling*

**Précis:** Based on conditional mouse models of metastatic breast cancer that are immunocompetent and clinically relevant, the current study provides an alternate rationale for therapeutic intervention of p120-catenin negative invasive breast cancer.

**4950**

*TRAF6 Upregulates Expression of HIF-1α and Promotes Tumor Angiogenesis*
Heng Sun, Xue-Bing Li, Ya Meng, Li Fan, Min Li, and Jing Fang

**Précis:** A factor well studied in the TNF response and implicated in innate and adaptive immune control is established in this study to control tumor angiogenesis.

**4960**

*Retraction: Sp100 as a Potent Tumor Suppressor: Accelerated Senescence and Rapid Malignant Transformation of Human Fibroblasts through Modulation of an Embryonic Stem Cell Program*

**CORRECTION**

*Correction: IKK4a/ARF Inactivation with Activation of the NF-κB/IL-6 Pathway Is Sufficient to Drive the Development and Growth of Angiosarcoma*
ABOUT THE COVER

Schematic representation of the IRE1α-dependent activation loop that controls tumor cell adaptation. Tumor cell is presented in light gray, stromal cells in dark gray. Proteins are represented by circles, with upregulation in green and downregulation in red. Connections following stress-mediated activation of IRE1α are presented in green for activation and red for inhibition. For details, see article by Pluquet and colleagues on page 4732.