Cancer Research
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BREAKING ADVANCES

617 Highlights from Recent Cancer Literature

REVIEWS

619 Emerging Links between E2F Control and Mitochondrial Function
Elizaveta V. Benevolenskaya and Maxim V. Frolov

624 GOLPH3 Links the Golgi, DNA Damage, and Cancer
Matthew D. Buschman, Juliati Rahajeng, and Seth J. Field

PRIORITY REPORT

628 A Unique Subset of Epithelial Ovarian Cancers with Platinum Sensitivity and PARP Inhibitor Resistance
Raphael Cecaldi, Kevin W. O’Connor, Kent W. Mouw, Adam Y. Li, Ursula A. Matulonis, Alan D. D’Andrea, and Panagiotis A. Konstantinopoulos

Précis: These findings reveal a mechanism of platinum sensitivity that alters sensitivity to PARP inhibitors in a discordant manner, with potential implications for trials of this new class of drugs in ovarian cancer.

MICROENVIRONMENT AND IMMUNOLOGY

635 Accelerated Tumor Progression in Mice Lacking the ATP Receptor P2X7
Elena Adinolfi, Marina Capece, Alessia Franceschini, Simonetta Falzoni, Anna L. Giuliani, Alessandra Rotondo, Alba C. Sarti, Massimo Bonora, Susanne Syberg, Domenica Cortigiano, Paolo Pinton, Niklas R. Jorgensen, Luigi Abelli, Laura Emionite, Lizzia Raffaghello, Vito Pistoia, and Francesco Di Virgilio

Précis: These provocative genetic results challenge the notion that inflammation solely promotes tumor growth by showing how deletion of an important proinflammatory receptor, the P2X7/ATP receptor, can impair antitumor responses and promote malignant progression.

MOLECULAR AND CELLULAR PATHOBIOLOGY

645 Prostaglandin E2 Inhibits p53 in Human Breast Adipose Stromal Cells: A Novel Mechanism for the Regulation of Aromatase in Obesity and Breast Cancer

Précis: These results show that in addition to its conventional roles in cell-cycle arrest and apoptosis, p53 may also prevent mammary gland hyperplasia and dysplasia by inhibiting expression of aromatase in breast adipose stromal cells.

656 β-Catenin Promotes Regulatory T-cell Responses in Tumors by Inducing Vitamin A Metabolism in Dendritic Cells
Yuan Fong, Indumathi Manoharan, Amol Suryawanshi, Tanmay Majumdar, Melinda L. Angus-Hill, Pandelakis A. Koni, Balaji Manicassamy, Andrew L. Mellor, David H. Munn, and Santhakumar Manicassamy

Précis: In this seminal study, yet another fundamental oncogenic pathway is linked to immune escape, a fundamental driver of malignant conversion that is coordinated with tumor growth, offering new opportunities to reposition cancer cell-centric therapeutic drugs in trials in which they may be more properly conceptualized as immunotherapeutic agents.

666 Genetic Mutation of p53 and Suppression of the miR-17-92 Cluster Are Synthetic Lethal in Non-Small Cell Lung Cancer due to Upregulation of Vitamin D Signaling

Précis: These genetic findings suggest that vitamin D receptor agonists may be highly efficacious in p53 mutant lung cancers, a possibility with immediate implications for clinical evaluation.
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<td>Reprogramming of the ERα and ERβ Target Gene Landscape Triggers Tamoxifen Resistance in Breast Cancer Verena Thewes, Ronald Simon, Petra Schroeter, Magdalena Schlottke, Tobias Anzeneder, Reinhard Buttner, Vladimir Benes, Guido Sauter, Barbara Burwinkel, Robert I. Nicholson, Hans-Peter Sinn, Andreas Schneweiss, Ulrich Deuschle, Marc Zapata, Stefanie Heck, and Peter Lichter</td>
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### THERAPEUTICS, TARGETS, AND CHEMICAL BIOLOGY

#### 720
- Reprogramming of the ERα and ERβ Target Gene Landscape Triggers Tamoxifen Resistance in Breast Cancer  
  **Précis:** These findings suggest that activation of the estrogen-related receptor ERα promotes resistance to antiendocrine therapy in breast cancer and provide a rationale to explore this receptor as a drug target for mitigating the endocrine-resistant phenotype in patients.

#### 732
- BRCA2-Deficient Sarcomatoid Mammary Tumors Exhibit Multidrug Resistance  
  Janneke E. Jaspers, Wendy Sol, Ariena Kersbergen, Andreas Schlicker, Charlotte Guyader, Guotai Xu, Lodewyk Wessels, Piet Borst, Jos Jonkers, and Sven Rottenberg  
  **Précis:** Epithelial-to-mesenchymal transition in murine tumors is associated with an acquisition of multidrug resistance due to increased expression of genes encoding drug efflux transporters.

### TUMOR AND STEM CELL BIOLOGY

#### 742
- ERK5 Is a Critical Mediator of Inflammation-Driven Cancer  
  Katherine G. Finegan, Diana Perez-Madrigal, James R. Hitchin, Clare C. Davies, Allan M. Jordan, and Cathy Tournier  
  **Précis:** These findings highlight a kinase that fosters chronic inflammation in the setting of carcinogenesis, a key issue in understanding how an inflamed microenvironment supports cancer progression.

#### 754
- Epigenetic Silencing of miR-490-3p Reactivates the Chromatin Remodeler SMARCD1 to Promote Helicobacter pylori–Induced Gastric Carcinogenesis  
  **Précis:** This study shows how miRNA misregulation of a member of the SWI/SNF chromatin remodeling family contributes to the development of infection-associated stomach cancers.
Suppressing TGFβ Signaling in Regenerating Epithelia in an Inflammatory Microenvironment Is Sufficient to Cause Invasive Intestinal Cancer

Hiroko Oshima, Mizuho Nakayama, Tae-Su Han, Kuniko Naoi, Xiaoli Ju, Yusuke Maeda, Sylvie Robine, Kiichiro Tsuchiya, Toshiro Sato, Hiroshi Sato, Makoto Mark Taketo, and Masanobu Oshima

Précis: These provocative results show how invasive colon cancers can develop simply as a result of chronic inflammation that engenders evolution of immune escape, alongside epithelial cell regeneration that seeks to restore colonic tissue in the face of ongoing inflammation.

LETTER TO THE EDITOR

Cep63 Recruits Cdk1 to the Centrosome—Letter
Mohammad Alsa, Harald Löfler, Anne Fechter, Jiri Bartek, and Alwin Krämer

CORRECTION

Correction: AIMP3 Haploinsufficiency Disrupts Oncogene-Induced p53 Activation and Genomic Stability

ABOUT THE COVER

Human neural stem cell (hNSC) transplantation reverses chemotherapy-induced cognitive dysfunction through a mechanism involving the preservation of host neuronal morphology. The image shows Golgi-Cox impregnated neurons in the hippocampus of rats treated with chronic cyclophosphamide and engrafted with hNSCs. Disruptions to overall granule and CA1 pyramidal cell neuronal architecture caused by cyclophosphamide were ameliorated in the brains of rats receiving hNSC transplantation when analyzed 2 months posttransplantation. For further details, see article by Acharya and colleagues on page 676.