# Table of Contents

**February 15, 2015 • Volume 75 • Number 4**

## 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 Ceccaldi, 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 Corgielliano, 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 P2X/ATP receptor, can impair antitumor responses and promote malignant progression.

## MOLECULAR AND CELLULAR PATHOBIOLOGY

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.

645  Prostaglandin E2 Inhibits p53 in Human Breast Adipose Stromal Cells: A Novel Mechanism for the Regulation of Aromatase in Obesity and Breast Cancer
    Xuyi Wang, Maria M. Docanto, Hirosho Sasano, Kathleen Cunningham Foundation Consortium for Research into Familial Breast Cancer, Camden Lo, Evan R. Simpson, and Kristy A. Brown
    **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 Hong, Indumathi Manoharan, Amol Suryawanshi, Tanmay Majumdar, Melinda L. Angus-Hill, Pandelakis A. Koni, Balaji Manicasamy, Andrew L. Mellor, David H. Munn, and Santhakumar Manicasamy
    **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.
Table of Contents

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.

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 Takeo, 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 Alsara, Harald Löffler, 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.