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Amani Makkouk and George J. Weiner

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Regulation of Epithelial–Mesenchymal Transition through SUMOylation of Transcription Factors
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The Cyclic AMP Pathway Is a Sex-Specific Modifier of Glioma Risk in Type I Neurofibromatosis Patients
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Précis: These results establishing a sex-specific role for cAMP regulation in affecting the risk of gliomas in NF1 patients may offer new rational strategies to reduce risk or treat brain tumors in this population.

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Oncolytic Measles Virus Expressing the Sodium Iodide Symporter to Treat Drug-Resistant Ovarian Cancer

Précis: Although clinical application of oncolytic viruses as experimental therapies has frequently been challenged on the grounds of efficacy, more recently engineered vectors based on measles virus may offer effective options to treat certain advanced cancers such as metastatic ovarian cancer.

Integrated Systems and Technologies
31
A Noninvasive Procedure for Early-Stage Discrimination of Malignant and Precancerous Vocal Fold Lesions Based on Laryngeal Dynamics Analysis
Jakob Unger, Jörg Lohscheller, Maximilian Reiter, Katharina Eder, Christian S. Betz, and Maria Schuster

Précis: This study offers a proof of concept for a procedure to diagnose most types of laryngeal cancers, possibly helping avoid current invasive diagnostic procedures that are associated with greater time, morbidity, and cost.

Microenvironment and Immunology
40
Akt1 and Akt3 Exert Opposing Roles in the Regulation of Vascular Tumor Growth

Précis: These findings offer a preclinical proof of concept for the therapeutic utility of treating poorly understood vascular tumors such as angiosarcoma with S6K inhibitors.
Intracellular Osteopontin Inhibits Toll-like
Twist1 Is a Key Regulator of Cancer-Associated

Tropomodulin 1 Expression Driven by NF-κB Enhances Breast Cancer Growth

Twist1 Is a Key Regulator of Cancer-Associated Fibroblasts

Intracellular Osteopontin Inhibits Toll-like Receptor Signaling and Impedes Liver Carcinogenesis

VEGF-Targeted Therapy Stably Modulates the Glycolytic Phenotype of Tumor Cells

Foretinib Is Effective Therapy for Metastatic Sonic Hedgehog Medulloblastoma
Four-in-One Antibodies Have Superior Cancer Inhibitory Activity against EGFR, HER2, HER3, and VEGF through Disruption of HER/MET Crosstalk
Shi Hu, Wenyuan Fu, Weihao Xu, Yang Yang, Hiroaki Takeda, and Wangdong Zhu

Précis: These results establish a new principle to achieve combined HER receptor inhibition and limit drug resistance using a single antibody.

Genetic Disruption of Lactate/H+ Symporters (MCTs) and Their Subunit CD147/BASIGIN Sensitizes Glycolytic Tumor Cells to Phenformin
Ibtissam Marchiq, Renaud Le Floch, Danièle Roux, Marie-Pierre Simon, and Jacques Pouyssegur

Précis: This study offers preclinical proof of concept for targeting lactic acid export as a therapeutic approach, the effect of which can be magnified by coupling it with phenformin, an antidiabetic biguanide drug.

Mdm2 and Aurora Kinase A Inhibitors Synergize to Block Melanoma Growth by Driving Apoptosis and Immune Clearance of Tumor Cells
Anna E. Vilgelm, Jeff S. Pawlikowski, Yan Liu, Oriana E. Hawkins, Tyler A. Davis, Jessica Smith, Kevin P. Weller, Linda W. Horton, Colt M. McClain, Gregory D. Ayers, David C. Turner, David C. Essaka, Clinton F. Stewart, Jeffrey A. Sosman, Mark C. Kelley, Jeffrey A. Ecsedy, Jeffrey N. Johnston, and Ann Richmond

Précis: These findings offer preclinical proof of concept for a combination drug treatment that leverages both senescence and immune surveillance to improve therapeutic outcomes.

TUMOR AND STEM CELL BIOLOGY

Contributions to Drug Resistance in Glioblastoma Derived from Malignant Cells in the Sub-Ependymal Zone

Précis: A particular region of the adult brain analogous to the embryonic forebrain germinal zone, which harbors various neural stem cell populations, is discovered in glioblastoma patients to harbor tumor-initiating cells, identifying this region as a target for immediate therapeutic attention by neuro-oncologists.

α-Tubulin Acetylation Elevated in Metastatic and Basal-like Breast Cancer Cells Promotes Microtentacle Formation, Adhesion, and Invasive Migration
Amanda E. Boggs, Michele I Vitolo, Rebecca A. Whipple, Monica S. Charpentier, Olga S. Goloubeva, Olga B. Ioffe, Kimberly C. Tuttle, Jana Slobiv, Yiling Lu, Gordon B. Mills, and Stuart S. Martin

Précis: These results identify a tight correlation between acetylated α-tubulin levels and aggressive metastatic behavior in breast cancer, with potential implications for the definition of a simple prognostic biomarker in patients with basal-like breast cancers.

B-Raf Inhibitors Induce Epithelial Differentiation in BRAF-Mutant Colorectal Cancer Cells
Ricarda Herr, Martin Köhler, Hana Andrilova, Florian Weinberg, Yvonne Mölter, Sebastian Halbach, Lisa Lutz, Justin Mastroianni, Martin Klose, Nicola Bittermann, Silke Kowar, Robert Zeiarter, Monilola A. Olayioye, Silke Lassmann, Hauke Busch, Melanie Boerries, and Tilman Brummer

Précis: This article reveals a novel facet of BRAF and MEK inhibitors currently in early clinical trials for evaluation in patients with metastatic prostate cancer.

SYK Is a Candidate Kinase Target for the Treatment of Advanced Prostate Cancer

Précis: These striking preclinical findings offer a mechanistic rationale to immediately reposition SYK kinase inhibitors currently in early clinical trials for evaluation in patients with metastatic prostate cancer.
ABOUT THE COVER

Timing of GLA in relation to vaccination impacts the pattern of OT1 cell accumulation. Representative bioluminescent images show site-specific accumulation of OT1 cells in different groups of mice 4 days post hind footpad vaccination. Vaccine-primed T cells accumulated in the draining lymph nodes in mice that received GVAX only or when GLA 24 was given 24 hrs post GVAX. However, when GLA is coadministered with GVAX, a systemic pattern of T-cell accumulation was observed. For details, see article by Kadayakkaza and colleagues on page 51.

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