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4245 Highlights from Recent Cancer Literature

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Kris C. Wood

4252 Breast Cancer Tumor Suppressors: A Special Emphasis on Novel Protein Nischarin
Mazvita Maziveyi and Suresh K. Alahari

4260 Extracellular DNA: A Bridge to Cancer
Martha C. Hawes, Fushi Wen, and Emad Elqusta

PRIORITY REPORT

4265 The Neuronal Pentraxin-2 Pathway Is an Unrecognized Target in Human Neuroblastoma, Which Also Offers Prognostic Value in Patients
Alice Bartolini, Daniela Di Paolo, Alessio Noghero, Daniele Murgia, Angela R. Sementa, Michele Cilli, Renata Pasqualini, Wadid Arap, Federico Bussolino, Miroz Punzoni, Fabio Pastorini, and Serena Marchiò

Précis: A ligand-receptor system associated with synapses in the nervous system is shown in this study to have important functional and prognostic roles in deadly pediatric neuroblastomas, where it may offer a tractable new therapeutic target.

INTEGRATED SYSTEMS AND TECHNOLOGIES

4272 A Quantitative System for Studying Metastasis Using Transparent Zebrafish

Précis: In zebrafish, advances in quantitative imaging combined with the ease, tractability, and amenability to genetic analysis produce a powerful tool for studying metastasis and other pathological processes in cancer.

4283 Preclinical Validation of the Utility of BLZ-100 in Providing Fluorescence Contrast for Imaging Spontaneous Solid Tumors
Janean Fidel, Katie C. Kennedy, William S. Dernell, Stacey Hansen, Valerie Wiss, Mark R. Stroud, Joshua I. Molho, Sue E. Knoblaugh, Jeffrey Meganck, James M. Olson, Brad Rice, and Julia Parrish-Novak

Précis: This preclinical proof-of-concept study for a new fluorescence imaging agent addresses the need in surgical oncology for real-time visualization of solid tumors that can improve their complete and precise resection, a key factor in extending patient remission and survival times.

MICROENVIRONMENT AND IMMUNOLOGY

4292 Fas Ligand Deficiency Impairs Tumor Immunity by Promoting an Accumulation of Monocytic Myeloid-Derived Suppressor Cells
Sanam Peyvandi, Stéphanie Buart, Boubekeur Samah, Marie Vétilouz, Yanyan Zhang, Ludovic Durrieu, Mélanie Polrot, Salem Chouaib, Karim Benihoud, Fawzia Louachie, and Saoussen Karray

Précis: These findings establish a new role for a cell death receptor ligand in tumor suppression, which acts by limiting immunosuppressive myeloid cells found in the tumor microenvironment.

4302 STAT3 Blockade Inhibits Radiation-Induced Malignant Progression in Glioma
Jasmine Lau, Shirin Ikhaniadeh, Susan Wang, Yekaterina A. Miroshnikova, Nicolas A. Salvatiera, Robyn A. Wong, Christin Schmidt, Valerie M. Weaver, William A. Weiss, and Anders I. Persson

Précis: These findings implicate therapeutic blockade of JAK2-STAT3 signaling as a supplementary strategy in patients undergoing radiation therapy for high-grade gliomas to prevent acquired treatment resistance and invasiveness at recurrence.

4312 CCL5-Mediated Th2 Immune Polarization Promotes Metastasis in Luminal Breast Cancer
Qianfei Zhang, Jilong Qin, Lin Zhong, Lei Gong, Bing Zhang, Yan Zhang, and Wei-Qiang Gao

Précis: These findings show that CCL5/CCR3 signaling promotes metastasis by inducing Th2 polarization of CD4+ T cells in luminal breast cancers, with implications for prognosis and immunotherapy in this setting.
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### THERAPEUTICS, TARGETS, AND CHEMICAL BIOLOGY

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*These results suggest that synergistic growth inhibition of lung cancers and head and neck cancers can be achieved by combined treatment with FGFR and MTOR inhibitors, offering a simple strategy to improve clinical management of FGFR1-driven cancers.*
Combining miR-10b–Targeted Nanotherapy with Low-Dose Doxorubicin Elicits Durable Regressions of Metastatic Breast Cancer
Byunghie Yoo, Amol Kavishwar, Alana Ross, Ping Wang, Doris F. Tabassum, Kornelia Polyak, Natalia Barneeva, Victoria Petkova, Pamela Pantazopoulos, Aesda Tena, Anna Moore, and Zdravka Medarova
Précis: These striking results suggest the existence of pathways that regulate the viability and proliferation of tumor cells only after they have acquired the ability to grow at distant metastatic sites, with important implications for selective targeting of advanced cancers.

Selective Inhibition of Parallel DNA Damage Response Pathways Optimizes Radiosensitization of Glioblastoma Stem-like Cells
Shafiq U. Ahmed, Ross Carruthers, Lesley Gilmour, Salih Yildirim, Colin Watts, and Anthony J. Chalmers
Précis: Radioresistance acquired by glioblastoma stem-like cells appears to be driven by both enhanced cell cycle checkpoint activation and DNA repair, implying that optimal radiosensitization might only be achieved by dual inhibition of both pathways.

These striking findings suggest that mitochondrial DNA polymorphisms may have a far greater impact on breast cancer development and metastasis than suspected currently.

Correction: ADAM28 Is Overexpressed in Human Breast Carcinomas: Implications for Carcinoma Cell Proliferation through Cleavage of Insulin-like Growth Factor Binding Protein-3

A stable, fluorescently labeled zebrafish melanoma cell line derived from transgenic mitfa-BRAFV600E;p53^−/−;mitfa-GFP fish was transplanted into casper, a transparent adult zebrafish. Green fluorescent melanoma cells metastasize to various regions of the transparent host fish over time. Shown here are sequential images of a tumor transplant that enable the quantitative assessment of metastatic spread in vivo. For details, see article by Heilmann and colleagues on page 4272.