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<td>BREAKING ADVANCES</td>
<td>Highlights from Recent Cancer Literature</td>
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<td>REVIEW</td>
<td>Regulation of the Na⁺/H⁺ Exchanger (NHE1) in Breast Cancer Metastasis</td>
<td>Schammim R. Amith and Larry Fliegel</td>
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<td>CLINICAL STUDIES</td>
<td>Oncolytic Vaccinia Virus Disrupts Tumor-Associated Vasculature in Humans</td>
<td>Caroline J. Breitbach, Rozanne Arulanandam, Naomi De Silva, Steve H. Thorne, Richard Patt, Manijeh Daneshmand, Anne Moon, Carolina Ilkow, James Burke, Tae-Ho Hwang, Jeong Heo, Mong Cho, Carolina Ilkow, James Burke, Tae-Ho Hwang, Jeong Heo, Mong Cho, David H. Kirn</td>
<td>Précis: While effective clinical applications of many oncolytic viruses have been frustrated, the use of oncolytic vaccinia to destroy established tumor vasculatures may offer a powerful outlet for this technology.</td>
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<td>INTEGRATED SYSTEMS AND TECHNOLOGIES</td>
<td>Nitroreductase, a Near-Infrared Reporter Platform for In Vivo Time-Domain Optical Imaging of Metastatic Cancer</td>
<td>Emmet McCormack, Elisabeth Silden, Richard M. West, Tina Pavlin, David R. Micklem, James B. Lorens, Bengt Erik Haug, Michael E. Cooper, Bjorn Tore Gjertsen</td>
<td>Précis: Improvements to noninvasive imaging methods are important to assist the preclinical development of drugs that are active in clinically relevant orthotopic models of advanced metastatic cancer, where the core challenge for treatment remains.</td>
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<td>MOLECULAR AND CELLULAR PATHOBIOLOGY</td>
<td>STC1 Expression By Cancer-Associated Fibroblasts Drives Metastasis of Colorectal Cancer</td>
<td>Cristina Peña, María Virtudes Céspedes, Maja Bradic Lindh, Sara Kiflemariam, Artur Mezheyevsky, Per-Henrik Edqvist, Christina Haggjöf, Helgi Birgisson, Linda Bojmar, Karin Jirström, Per Sandström, Eleonora Olsson, Srinivas Veerla, Alberto Gallardo, Tobias Sjöblom, Andy C.-M. Chang, Roger R. Reddel, Ramón Mangués, Martin Augusten, and Arne Ostman</td>
<td>Précis: Findings reveal a mechanistic basis for understanding how cancer-associated fibroblasts activated in the tumor microenvironment act to promote cancer metastasis, with implications for arresting this deadly process.</td>
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<td>Amplification of FRS2 and Activation of FGFR/FRS2 Signaling Pathway in High-Grade Liposarcoma</td>
<td>Keqiang Zhang, Kevin Chu, Xiwei Wu, Hanlin Gao, Jinhui Wang, Yate-Ching Yuan, Sofia Loera, Kimberley Ho, Yafan Wang, Warren Chow, Frank Un, Peiguo Chu, and Yen Yen</td>
<td>Précis: FGFR/FRS2 signaling may play an important role in the development of high-grade liposarcoma and, therefore, represents a potential therapeutic target.</td>
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<td>BRMS1 Suppresses Lung Cancer Metastases through an E3 Ligase Function on Histone Acetyltransferase p300</td>
<td>Yuan Liu, Marty W. Mayo, Alykhan S. Nagji, Emily H. Hall, Lisa S. Shock, Aizhen Xiao, Edward B. Stelow, and David R. Jones</td>
<td>Précis: Findings offer a mechanistic explanation for how the metastasis suppressor gene BRMS1 acts to suppress metastases in a lung cancer model.</td>
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Inhibition of Cholinergic Signaling Causes Apoptosis in Human Bronchioalveolar Carcinoma  
Jamie K. Lau, Kathleen C. Brown, Brent A. Thornhill, Clayton M. Crabtree, Aaron M. Dom, Theodore R. Witte, W. Elaine Hardman, Christopher A. McNees, Cody A. Stover, A. Betts Carpenter, Hai Tao Luo, Yi C. Chen, Brandon S. Shifflett, and Piyali Dasgupta  
 précis: Findings prompt immediate clinical testing of approved drugs that may improve the efficacy of treatments for a certain subtype of lung cancer.

THERAPEUTICS, TARGETS, AND CHEMICAL BIOLOGY

Dual Inhibition of Bel-2 and Bel-xl Strikingly Enhances P38K Inhibition-Induced Apoptosis in Human Myeloid Leukemia Cells through a GSK3- and Bim-Dependent Mechanism  
Mohamed Rahmani, Mandy Mayo Aust, Elisa Attiksson, David C. Williams Jr, Andrea Ferreira-Gonzalez, and Steven Grant  
 précis: This study defines a combinatorial strategy to block key nodes in cell survival signaling to greatly enhance the killing of acute myeloid leukemia cells exhibiting Akt activation.

Application of a Proapoptotic Peptide to Intratumorally Spreading Cancer Therapy  
Renwei Chen, Gary B. Braun, Xinquan Luo, Kazuki N. Sugahara, Tantam Teesalu, and Erkki Ruoslahti  
 précis: Results offer preclinical proof of concept for an injectable peptide modality that may be useful to treat tumors that are either surgically inoperable or otherwise difficult to treat systemically.

Targeted Cancer Therapy with a 2-Deoxyglucose–Based Adriamycin Complex  
Jie Cao, Sisi Cui, Siwen Li, Changli Du, Junmei Tian, Shunan Wan, Zhiyu Qian, Yueqing Gu, Wei R. Chen, and Guangji Wang  
 précis: A simple conjugate of adriamycin that improves cancer cell targeting limits the cardiotoxic liabilities of this drug, offering broad applications in cancer treatment.

Hyperactivated JNK Is a Therapeutic Target in pVHL-Deficient Renal Cell Carcinoma  
Jiabin An, Hui Ren Liu, Clara E. Magyar, Yanchuan Guo, Mysore S. Veena, Eri S. Srivatsan, Jiabin Huang, and Matthew B. Rettig  
 précis: This study provides insights into HIFα-independent mechanisms that drive renal cancer and offers new opportunities for therapeutic targeting of this disease.

TUMOR AND STEM CELL BIOLOGY

Tasquinimod Is an Allosteric Modulator of HDAC4 Survival Signaling within the Compromised Cancer Microenvironment  
 précis: Findings define the mechanism of action of an antiangiogenic drug currently in phase III trials and suggest how to leverage its efficacy in combination with other drugs that target the tumor microenvironment.
LETTER TO THE EDITOR

Oxidation-Mediated DNA Crosslinking Contributes to Toxicity of 6-Thioguanine in Human Cells — Letter
Nanne K.H. de Boer, Dirk P. van Asseldonk, Margien L. Seinen, and Adriaan A. van Bodegraven

CORRECTION

Correction: Chloroquine in Cancer Therapy: A Double-Edged Sword of Autophagy

ABOUT THE COVER

The microRNA network is considered to play critical roles in tumor progression; however, little information is available for microRNA in cancer stem-like cells (CSC). The results of microRNA profile analysis revealed that miR-7 is significantly downregulated in CSCs that are highly metastatic to the brain, and the expression of this microRNA significantly suppressed the ability of CSCs to metastasize to the brain in vivo. miR-7 was also found to be capable of modulating KLF4. Consistently, the expression of miR-7 and KLF4 in brain-metastatic lesions of breast cancer patients was found to be significantly downregulated and upregulated, respectively. High expression of KLF4 was also inversely correlated to brain-metastasis free survival of breast cancer patients. For details, see the article by Okuda and colleagues on page 1434.