

## Highlights of This Issue 1923

### REVIEW

- 1925 | **RAC1: An Emerging Therapeutic Option for Targeting Cancer Angiogenesis and Metastasis**  
Hemant K. Bid, Ryan D. Roberts, Parmeet K. Manchanda, and Peter J. Houghton

### SMALL MOLECULE THERAPEUTICS

- 1935 | **Targeting Aberrant Sialylation in Cancer Cells Using a Fluorinated Sialic Acid Analog Impairs Adhesion, Migration, and *In Vivo* Tumor Growth**  
Christian Büll, Thomas J. Boltje, Melissa Wassink, Annemarie M.A. de Graaf, Floris L. van Delft, Martijn H. den Brok, and Gosse J. Adema

- 1947 | **Novel Inhibitors of Cyclin-Dependent Kinases Combat Hepatocellular Carcinoma without Inducing Chemoresistance**  
Christine Haider, Markus Grubinger, Eva Řezníčková, Thomas S. Weiss, Hans Rotheneder, Walter Miklos, Walter Berger, Radek Jorda, Marek Zatloukal, Tomáš Gucký, Miroslav Strnad, Vladimír Kryštof, and Wolfgang Mikulits

- 1958 | **Overcoming Platinum Resistance in Preclinical Models of Ovarian Cancer Using the Neddylaton Inhibitor MLN4924**  
Amir A. Jazaeri, Etsuko Shibata, Jonghoon Park, Jennifer L. Bryant, Mark R. Conaway, Susan C. Modesitt, Peter G. Smith, Michael A. Milhollen, Allison J. Berger, and Anindya Dutta

- 1968 | **Combination Drug Scheduling Defines a “Window of Opportunity” for Chemopotentiation of Gemcitabine by an Orally Bioavailable, Selective ChK1 Inhibitor, GNE-900**  
Elizabeth Blackwood, Jennifer Epler, Ivana Yen, Michael Flagella, Tom O’Brien, Marie Evangelista, Stephen Schmidt, Yang Xiao, Jonathan Choi, Kaska Kowanzetz, Judi Ramiscal, Kenton Wong, Diana Jakubiak, Sharon Yee, Gary Cain, Lewis Gazzard, Karen Williams, Jason Halladay, Peter K. Jackson, and Shiva Malek

- 1981 | **A Urokinase Receptor-Derived Peptide Inhibiting VEGF-Dependent Directional Migration and Vascular Sprouting**  
Katia Bifulco, Immacolata Longanesi-Cattani, Eleonora Liguori, Claudio Arra, Domenica Rea, Maria Teresa Masucci, Mario De Rosa, Vincenzo Pavone, Maria Patrizia Stoppelli, and Maria Vincenza Carriero

- 1994 | **The Dual Pathway Inhibitor Rigosertib Is Effective in Direct Patient Tumor Xenografts of Head and Neck Squamous Cell Carcinomas**  
Ryan T. Anderson, Stephen B. Keysar, Daniel W. Bowles, Magdalena J. Glogowska, David P. Astling, J. Jason Morton, Phuong Le, Adrian Umpierrez, Justin Eagles-Soukup, Gregory N. Gan, Brian W. Vogler, Daniel Sehr, Sarah M. Takimoto, Dara L. Aisner, Francois Wilhelm, Barbara A. Frederick, Marileila Varella-Garcia, Aik-Choon Tan, and Antonio Jimeno


- 2006 | **Novel Treatment for Mantle Cell Lymphoma Including Therapy-Resistant Tumor by NF- $\kappa$ B and mTOR Dual-Targeting Approach**  
Nagendra K. Chaturvedi, Rajkumar N. Rajule, Ashima Shukla, Prakash Radhakrishnan, Gordon L. Todd, Amarnath Natarajan, Julie M. Vose, and Shantaram S. Joshi

2018 | **Sunitinib and SU11652 Inhibit Acid Sphingomyelinase, Destabilize Lysosomes, and Inhibit Multidrug Resistance**  
Anne-Marie Ellegaard,  
Line Groth-Pedersen, Viola Oorschot,  
Judith Klumperman, Thomas Kirkegaard,  
Jesper Nylandsted, and Marja Jäättelä


2088 | **Histone Deacetylase Inhibition Overcomes Drug Resistance through a miRNA-Dependent Mechanism**  
Tracy Murray-Stewart, Christin L. Hanigan,  
Patrick M. Woster, Laurence J. Marton, and  
Robert A. Casero Jr

2100 | **PI3K Stimulates DNA Synthesis and Cell-Cycle Progression via Its p55PIK Regulatory Subunit Interaction with PCNA**  
Guihua Wang, Xiaonian Cao, Senyan Lai,  
Xuelai Luo, Yongdong Feng, Xianmin Xia,  
Paul M. Yen, Jianping Gong, and Junbo Hu

## LARGE MOLECULE THERAPEUTICS

2031 | **Preclinical Activity of the Type II CD20 Antibody GA101 (Obinutuzumab) Compared with Rituximab and Ofatumumab *In Vitro* and in Xenograft Models**  
 Sylvia Herter, Frank Herting, Olaf Mundigl,  
Inja Waldhauer, Tina Weinzierl, Tanja Fauti,  
Gunter Muth, Doris Ziegler-Landesberger,  
Erwin Van Puijtenbroek, Sabine Lang,  
Minh Ngoc Duong, Lina Reslan,  
Christian A. Gerdes, Thomas Friess, Ute Baer,  
Helmut Burtscher, Michael Weidner,  
Charles Dumontet, Pablo Umama,  
Gerhard Niederfellner, Marina Bacac, and  
Christian Klein

2110 | **Catalase Abrogates  $\beta$ -Lapachone-Induced PARP1 Hyperactivation-Directed Programmed Necrosis in NQO1-Positive Breast Cancers**  
Erik A. Bey, Kathryn E. Reinicke,  
Melissa C. Srougi, Marie Varnes,  
Vernon E. Anderson, John J. Pink,  
Long Shan Li, Malina Patel, Lifan Cao,  
Zachary Moore, Amy Rommel,  
Michael Boatman, Cheryl Lewis,  
David M. Euhus, William G. Bornmann,  
Donald J. Buchsbaum, Douglas R. Spitz,  
Jinming Gao, and David A. Boothman

2043 | **Targeting Aberrant DNA Double-Strand Break Repair in Triple-Negative Breast Cancer with Alpha-Particle Emitter Radiolabeled Anti-EGFR Antibody**  
 Hong Song, Mohammad Hedayati,  
Robert F. Hobbs, Chunbo Shao,  
Frank Bruchertseifer, Alfred Morgenstern,  
Theodore L. DeWeese, and George Sgouros

2121 | **Sorafenib Overcomes Irinotecan Resistance in Colorectal Cancer by Inhibiting the ABCG2 Drug-Efflux Pump**  
Thibault Mazard, Annick Causse,  
Joelle Simony, Wilhem Leconet,  
Nadia Vezzio-Vie, Adeline Torro,  
Marta Jarlier, Alexandre Evraud,  
Maguy Del Rio, Eric Assenat,  
Pierre Martineau, Marc Ychou, Bruno Robert,  
and Celine Gongora

2055 | **The Functionalized Human Serine Protease Granzyme B/VEGF<sub>121</sub> Targets Tumor Vasculature and Ablates Tumor Growth**  
Khalid A. Mohamedali, Yu Cao,  
Lawrence H. Cheung, Walter N. Hittelman,  
and Michael G. Rosenblum



2135 | **Synthetic Lethal Targeting of PTEN-Deficient Cancer Cells Using Selective Disruption of Polynucleotide Kinase/Phosphatase**  
Todd R. Mereniuk,  
Mohamed A.M. El Gendy,  
Ana M. Mendes-Pereira, Christopher J. Lord,  
Sunita Ghosh, Edan Foley, Alan Ashworth,  
and Michael Weinfeld

## CANCER THERAPEUTICS INSIGHTS

2067 | **Berberamine Inhibits the Growth of Liver Cancer Cells and Cancer-Initiating Cells by Targeting Ca<sup>2+</sup>/Calmodulin-Dependent Protein Kinase II**  
Zhipeng Meng, Tao Li, Xiaoxiao Ma,  
Xiaoqiong Wang, Carl Van Ness, Yichao Gan,  
Hong Zhou, Jinfen Tang, Guiyu Lou,  
Yafan Wang, Jun Wu, Yun Yen,  
Rongzhen Xu, and Wendong Huang

2145 | **Glycolysis Inhibition Sensitizes Non-Small Cell Lung Cancer with T790M Mutation to Irreversible EGFR Inhibitors via Translational Suppression of Mcl-1 by AMPK Activation**  
Sun Mi Kim, Mi Ran Yun,  
Yun Kyong Hong, Flavio Solca,  
Joo-Hang Kim, Hyun-Jung Kim, and  
Byoung Chul Cho

2078 | **Histone Deacetylase Regulation of ATM-Mediated DNA Damage Signaling**  
K. Ted Thurn, Scott Thomas, Paromita Raha,  
Ian Qureshi, and Pamela N. Munster

- 2157 **Overexpression of Asparagine Synthetase and Matrix Metalloproteinase 19 Confers Cisplatin Sensitivity in Nasopharyngeal Carcinoma Cells**  
Ran-Yi Liu, Zizheng Dong, Jianguo Liu, Ling Zhou, Wenlin Huang, Sok Kean Khoo, Zhongfa Zhang, David Petillo, Bin Tean Teh, Chao-Nan Qian, and Jian-Ting Zhang
- 2167 **Combining Erlotinib and Cetuximab Is Associated with Activity in Patients with Non-Small Cell Lung Cancer (Including Squamous Cell Carcinomas) and Wild-Type EGFR or Resistant Mutations**  
Jennifer J. Wheler, Apostolia M. Tsimberidou, Gerald S. Falchook, Ralph G. Zinner, David S. Hong, Jansina Y. Fok, Siqing Fu, Sarina A. Piha-Paul, Aung Naing, and Razelle Kurzrock
- 2176 **EGFR Inhibition Promotes an Aggressive Invasion Pattern Mediated by Mesenchymal-like Tumor Cells within Squamous Cell Carcinomas**  
Devraj Basu, Arnaud F. Bewley, Steven M. Sperry, Kathleen T. Montone, Phyllis A. Gimotty, Kati Rasanen, Nicole D. Facompre, Gregory S. Weinstein, Hiroshi Nakagawa, J. Alan Diehl, Anil K. Rustgi, and Meenhard Herlyn
- 2187 **Cetuximab Reverses the Warburg Effect by Inhibiting HIF-1-Regulated LDH-A**  
Haiquan Lu, Xinqun Li, Zhongguang Luo, Jie Liu, and Zhen Fan
- 2200 **Niclosamide Overcomes Acquired Resistance to Erlotinib through Suppression of STAT3 in Non-Small Cell Lung Cancer**  
Rui Li, Zhongliang Hu, Shi-Yong Sun, Zhuo G. Chen, Taofeek K. Owonikoko, Gabriel L. Sica, Suresh S. Ramalingam, Walter J. Curran, Fadlo R. Khuri, and Xingming Deng
- 2213 **Subtype-Specific MEK-PI3 Kinase Feedback as a Therapeutic Target in Pancreatic Adenocarcinoma**  
Olga K. Mirzoeva, Eric A. Collisson, Peter M. Schaefer, Byron Hann, Yun K. Hom, Andrew H. Ko, and W. Michael Korn
- 2226 **Differential Induction of Apoptosis and Senescence by the DNA Methyltransferase Inhibitors 5-Azacytidine and 5-Aza-2'-Deoxycytidine in Solid Tumor Cells**  
Sascha Venturelli, Alexander Berger, Timo Weiland, Frank Essmann, Michaela Waibel, Tina Nuebling, Sabine Häcker, Martin Schenk, Klaus Schulze-Osthoff, Helmut R. Salih, Simone Fulda, Bence Sipos, Ricky W. Johnstone, Ulrich M. Lauer, and Michael Bitzer
- 2237 **Chemotherapy Counteracts Metastatic Dissemination Induced by Antiangiogenic Treatment in Mice**  
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- 2248 **Uracil-DNA Glycosylase Expression Determines Human Lung Cancer Cell Sensitivity to Pemetrexed**  
 Lachelle D. Weeks, Pingfu Fu, and Stanton L. Gerson
- 2261 **Prognostic Role of Lemur Tyrosine Kinase-3 Germline Polymorphisms in Adjuvant Gastric Cancer in Japan and the United States**  
 Takeru Wakatsuki, Melissa J. LaBonte, Pierre O. Bohanes, Wu Zhang, Dongyun Yang, Mizutomo Azuma, Afsaneh Barzi, Yan Ning, Fotios Loupakis, Siamak Saadat, Nico Volz, Sebastian Stintzing, Rita El-Khoueiry, Wasaburo Koizumi, Masahiko Watanabe, Manish Shah, Justin Stebbing, Georgios Giamas, and Heinz-Josef Lenz

## COMPANION DIAGNOSTICS AND BIOMARKERS

## TOOLS AND TECHNOLOGIES

## CORRECTION

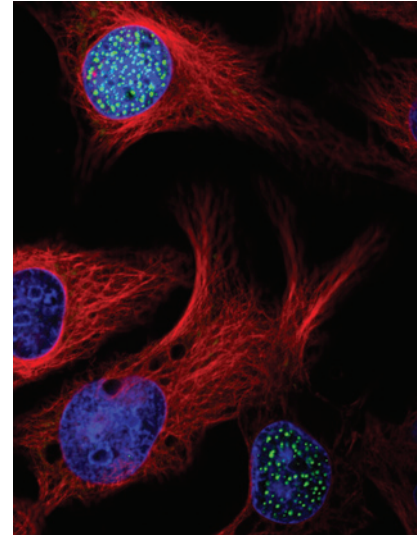
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## ABOUT THE COVER

This image shows H3K9 trimethylation (H3K9me3) of nuclear histone proteins as a marker for cellular senescence. Immunofluorescence picture of HepG2 human hepatoblastoma cells treated with 20  $\mu\text{mol/L}$  5-aza-2'-deoxycytidine (5-aza-dC, Dacogen) for a 72-hour time period. Cells were stained using DAPI,  $\alpha$ -tubulin, and  $\alpha$ -trimethylation of H3K9 (histone protein H3K9me3). The green spots within the cellular nucleus represent the presence of the senescence marker H3K9me3 as a cellular response to the treatment with the DNA-methyltransferase inhibitor 5-aza-2'-deoxycytidine. For more details, see the article by Venturelli and colleagues on page 2226.



# Molecular Cancer Therapeutics

**12 (10)**

*Mol Cancer Ther* 2013;12:1923-2282.

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