Highlights of This Issue 1

REVIEWS

3 TRAIL Signaling and Synergy Mechanisms Used in TRAIL-Based Combination Therapies
Christian T. Hellwig and Markus Rehm

14 Oncogenic Viruses and Tumor Glucose Metabolism: Like Kids in a Candy Store
Evan Noch and Kamel Khalili

THERAPEUTIC DISCOVERY

24 MUC13 Mucin Augments Pancreatic Tumorigenesis
Subhash C. Chauhan, Mara C. Ebeling, Diane M. Maher, Michael D. Koch, Akira Watanabe, Hiroyuki Aburatani, Yuhlong Lio, and Meena Jaggi

34 A 71-Gene Signature of TRAIL Sensitivity in Cancer Cells
Jun-Jie Chen, Steen Knudsen, Wiktor Mazin, Jesper Dahlgaard, and Baolin Zhang

45 Rapamycin Induces Bad Phosphorylation in Association with Its Resistance to Human Lung Cancer Cells
Yan Liu, Shi-Yong Sun, Taofeek K. Owonikoko, Gabriel L. Sica, Walter J. Curran, Fadlo R. Khuri, and Fred Bunz

A 71-Gene Signature of TRAIL Sensitivity in Cancer Cells

57 Effective Targeting of Hedgehog Signaling in a Medulloblastoma Model with PF-5274857, a Potent and Selective Smoothened Antagonist That Penetrates the Blood–Brain Barrier
Allison Rohner, Mary E. Spilker, Justine L. Lam, Bernadette Pascual, Darian Bartkowski, Qing John Li, Amy H. Yang, Greg Stevens, Meirong Xu, Peter A. Wells, Simon Planken, Sajiv Nair, and Shaoxian Sun

66 Genomic c-Myc Quadruplex DNA Selectively Kills Leukemia
Kara C. Sedoris, Shelia D. Thomas, Cortney R. Clarkson, David Muench, Ashraful Islam, Rajesh Singh, and Donald M. Miller

PRECLINICAL DEVELOPMENT

119 A Monoclonal Antibody against Human Notch1 Ligand-Binding Domain Depletes Subpopulation of Putative Breast Cancer Stem-like Cells
Ankur Sharma, Anurag N. Paranjape, Annapoorni Rangarajan, and Rajan R. Dige

132 SOD Mimetics: A Novel Class of Androgen Receptor Inhibitors That Suppresses Castration-Resistant Growth of Prostate Cancer
Rusha Thomas and Nima Sharifi

153 Targeted Mutations in the ATR Pathway Define Agent-Specific Requirements for Cancer Cell Growth and Survival
Deborah Wilsker, Jon H. Chung, Ivan Pradilla, Eva Petermann, Thomas Helleday, and Fred Bunz

159 Aryl Hydrocarbon Receptor Agonists Induce MicroRNA-335 Expression and Inhibit Lung Metastasis of Estrogen Receptor Negative Breast Cancer Cells
Shu Zhang, KyoungHyun Kim, Un Ho Jin, Catherine Pfent, Huojun Cao, Brad Amendt, Xinyi Liu, Heather Wilson-Robles, and Stephen Safe

170 A Systems Biology Approach Identifies SART1 as a Novel Determinant of Both 5-Fluorouracil and SN38 Drug Resistance in Colorectal Cancer

188 Apigenin Induces Apoptosis in Human Leukemia Cells and Exhibits Anti-Leukemic Activity In Vivo
Amit Budhraja, Ning Gao, Zhuo Zhang, Young-Ok Son, Senping Cheng, Xin Wang, Songze Ding, Andrew Hitron, Gang Chen, Jia Luo, and Xianglin Shi
Single-Chain Antibody-Based Immunotoxins Targeting Her2/neu: Design Optimization and Impact of Affinity on Antitumor Efficacy and Off-Target Toxicity
Yu Cao, James D. Marks, Qian Huang, Stephen I. Rudnick, Chiyi Xiong, Walter N. Hittelman, Xiaoxia Wen, John W. Marks, Lawrence H. Cheung, Kim Boland, Chun Li, Gregory P. Adams, and Michael G. Rosenblum

MK-2206, a Novel Allosteric Inhibitor of Akt, Synergizes with Gefitinib against Malignant Glioma via Modulating Both Autophagy and Apoptosis
Yan Cheng, Yi Zhang, Li Zhang, Xingcong Ren, Kathryn J. Huber-Keener, Xiaoyuan Liu, Lei Zhou, Jason Liao, Heike Keihack, Li Yan, Eric Rubin, and Jin-Ming Yang

A Polymeric Nanoparticle Encapsulated Small-Molecule Inhibitor of Hedgehog Signaling (NanoHHI) Bypasses Secondary Mutational Resistance to Smoothened Antagonists
Venugopal Chenna, Chaoxin Hu, Dipankar Pramanik, Blake T. Aftab, Collins Karikari, Nathaniel R. Campbell, Seung-Mo Hong, Ming Zhao, Michelle A. Rudek, Saeed R. Khan, Charles M. Rudin, and Anirban Maitra

MK1775, a Selective Wee1 Inhibitor, Shows Single-Agent Antitumor Activity against Sarcoma Cells
Jenny M. Kreahling, Jennifer Y. Gemmer, Damon Reed, Douglas Letson, Marilyn Bui, and Soner Altiok

Induction of Vascular Endothelial Growth Factor Secretion by Childhood Acute Lymphoblastic Leukemia Cells via the FLT-3 Signaling Pathway
Ana Markovic, Karen L. MacKenzie, and Richard B. Lock

In Silico Screening Reveals Structurally Diverse, Nanomolar Inhibitors of NQO2 That Are Functionally Active in Cells and Can Modulate NF-κB Signaling
Karen A. Nolan, Mark S. Dunstan, Mary C. Caraher, Katherine A. Scott, David Leys, and Ian J. Stratford

Overcoming Erlotinib Resistance in EGFR Mutation–Positive Non–Small Cell Lung Cancer Cells by Targeting Survivin
Kunio Okamoto, Isamu Okamoto, Erina Hoshita, Kiyoko Kujwata, Haruka Yamaguchi, Aya Kita, Kentaro Yamanaka, Mayumi Ono, and Kazuhiro Nakagawa

Breast Cancer–Derived Bone Metastasis Can Be Effectively Reduced through Specific c-MET Inhibitor Tivantinib (ARQ 197) and shRNA c-MET Knockdown
Sara Previdi, Giovanni Abbadesa, Francesca Dalò, Dennis S. France, and Massimo Broggini

Epratuzumab–SN-38: A New Antibody–Drug Conjugate for the Therapy of Hematologic Malignancies
Robert M. Sharkey, Serengulam V. Govindan, Thomas M. Cardillo, and David M. Goldenberg

Targeting Interleukin-4 Receptor α with Hybrid Peptide for Effective Cancer Therapy
Liying Yang, Tomohisa Horibe, Masayuki Kohno, Mari Haramoto, Koji Ohara, Raj K. Puri, and Koji Kawakami

Tumor Suppressor MicroRNA-493 Decreases Cell Motility and Migration Ability in Human Bladder Cancer Cells by Downregulating RhoC and FZD4
Koji Ueno, Hiroshi Hirata, Shahana Majid, Soichiro Yamamura, Varahram Shahryari, Z. Laura Tabatabai, Yuji Hinoda, and Rajvir Dahiya
ABOUT THE COVER

Pancreatic cancer is extremely lethal, partially due to the aggressive nature of the disease and the lack of reliable markers for early detection. Mucin 13 (MUC13) was found to be overexpressed in pancreatic cancer tissue samples. In *in vitro* studies, the expression of MUC13 increased the oncogenic characteristics of pancreatic cancer cells, including increased cell proliferation, invasion, and modulation of tumorigenic signaling pathways. Exogenous MUC13 expression also increased tumorigenesis in a mouse model of pancreatic cancer. For details, see article by Chauhan and colleagues on page 24.