Table of Contents

March 2014 • Volume 13 • Number 3

Molecular Cancer Therapeutics

Highlights of This Issue 555

HYPOTHESIS/COMMENTARY

557 Advances in the Diagnosis and Treatment of Non–Small Cell Lung Cancer
Rathi N. Pillai and Suresh S. Ramalingam

SMALL MOLECULE THERAPEUTICS

565 A Novel Small-Molecule Inhibitor of Mcl-1 Blocks Pancreatic Cancer Growth In Vitro and In Vivo
Fardokht Abulwerdi, Chenzhong Liao, Meilan Liu, Asfar S. Azmi, Amro Aboukameel, Ahmed S.A. Mady, Thippetswamy Gulappa, Tomasz Cierpicki, Scott Owens, Tao Zhang, Duxin Sun, Jeanne A. Stuckey, Ramzi M. Mohammad, and Zaneta Nikolovska-Coleska

576 Combined MET Inhibition and Topoisomerase I Inhibition Block Cell Growth of Small Cell Lung Cancer
Cleo E. Rolle, Rajani Kanteti, Mosmi Surati, Suvobroto Nandi, Immanuel Dhanasingh, Soheil Yala, Maria Tretiakova, Qudsia Arif, Todd Hembrough, Toni M. Brand, Deric L. Wheeler, Aliya N. Husain, Everett E. Vokes, Deric L. Wheeler, Aliya N. Husain, and Xingming Deng

585 The Fatty Acid Synthase Inhibitor Orlistat Reduces the Growth and Metastasis of Orthotopic Tongue Oral Squamous Cell Carcinomas

596 The AMPK Inhibitor Compound C Is a Potent AMPK-Independent Antiglioma Agent
Xiaona Liu, Rishi Raj Chhipa, Ichiro Nakano, and Biplab Dasgupta

606 Disruption of STAT3 by Niclosamide Reverses Radioresistance of Human Lung Cancer
Shuo You, Rui Li, Dongkyou Park, Maohua Xie, Gabriela L. Sica, Ya Cao, Zhi-Qiang Xiao, and Xingming Deng

617 TPCA-1 Is a Direct Dual Inhibitor of STAT3 and NF-κB and Regresses Mutant EGFR-Associated Human Non–Small Cell Lung Cancers
Jing Nan, Yuping Du, Xing Chen, Qifeng Bai, Yuxin Wang, Xinxin Zhang, Ning Zhu, Jing Zhang, Jianwen Hou, Qin Wang, and Jinbo Yang

630 Tirapazamine Sensitizes Hepatocellular Carcinoma Cells to Topoisomerase I Inhibitors via Cooperative Modulation of Hypoxia-Inducible Factor-1α
Tian-Yu Cai, Xiao-Wen Liu, Hong Zhu, Ji Cao, Jun Zhang, Ling Ding, Jian-Shu Lou, Qiao-Jun He, and Bo Yang

LARGE MOLECULE THERAPEUTICS

643 Immunoglobulin Fc Domain Fusion to TRAIL Significantly Prolongs Its Plasma Half-Life and Enhances Its Antitumor Activity
Haizhen Wang, Jennifer S. Davis, and Xiangwei Wu

651 Enhancement of the Tumor Penetration of Monoclonal Antibody by Fusion of a Neuropilin-Targeting Peptide Improves the Antitumor Efficacy
Tae-Hwan Shin, Eun-Sil Sung, Ye-Jin Kim, Ki-Su Kim, Se-Ho Kim, Seok-Ki Kim, Young-Don Lee, and Yong-Sung Kim

CANCER BIOLOGY AND SIGNAL TRANSDUCTION

662 Dinaciclib (SCH727965) Inhibits the Unfolded Protein Response through a CDK1- and 5-Dependent Mechanism
Tri K. Nguyen and Steven Grant

675 XPO1 (CRM1) Inhibition Represses STAT3 Activation to Drive a Survivin-Dependent Oncogenic Switch in Triple-Negative Breast Cancer
Yan Cheng, Michael P. Holloway, Kevin Nguyen, Dilara McCauley, Yosef Landesman, Michael G. Kauffman, Sharon Shacham, and Rachel A. Altura

687 CBP-Mediated FOXO-1 Acetylation Inhibits Pancreatic Tumor Growth by Targeting SirT1
Kartick C. Pramanik, Neel M. Fofaria, Parul Gupta, and Sanjay K. Srivastava
Synuclein \( \gamma \) Compromises Spindle Assembly Checkpoint and Renders Resistance to Antimicrotubule Drugs
Suyu Miao, Kejin Wu, Bo Zhang, Ziyi Weng, Mingjie Zhu, Yunshu Lu, Ramadas Krishna, and Yuenian Eric Shi

Masitinib Antagonizes ATP-Binding Cassette Subfamily C Member 10–Mediated Paclitaxel Resistance: A Preclinical Study

Glioblastoma Cells Containing Mutations in the Cohesin Component STAG2 Are Sensitive to PARP Inhibition
Melanie L. Bailey, Nigel J. O’Neil, Derek M. van Pel, David A. Solomon, Todd Waldman, and Philip Hieter

Mutant Ras Elevates Dependence on Serum Lipids and Creates a Synthetic Lethality for Rapamycin
Darin Salloum, Suman Mukhopadhyay, Kaity Tung, Aleksandra Polonetskaya, and David A. Foster

microRNAs miR-27a and miR-27b Directly Regulate Liver Dihydropyrimidine Dehydrogenase Expression through Two Conserved Binding Sites
Steven M. Offer, Gabriel L. Butterfield, Calvin R. Jerde, Croix C. Fossum, Natalie J. Wegner, and Robert B. Diasio

Cancer-Associated CD43 Glycoforms as Target of Immunotherapy
Franca Maria Tuccillo, Camillo Palmieri, Giuseppe Fiume, Annamaria de Laurentis, Marco Schiavone, Cristina Falcone, Enrico Iaccino, Ricciarda Galandrini, Cristina Capuano, Angela Santoni, Francesco Paolo D’Armiento, Claudio Arra, Antonio Barbieri, Fabrizio Dal Piaz, David Venzon, Patrizia Bonelli, Franco Maria Buonaguro, Iris Scala, Massimo Mallardo, Ileana Quinto, and Giuseppe Scala

Sorafenib Inhibits ABCG2 and Overcomes Irinotecan Resistance—Letter
Malcolm A. Smith

Sorafenib Inhibits ABCG2 and Overcomes Irinotecan Resistance—Response
Celine Gongora

STAT3 and NF-κB signaling pathways are often simultaneously activated in neoplastic cells and play important roles in tumorigenesis and drug sensitivity. TPCA-1, a previously found antagonist of IKKs, blocks STAT3 anchoring to upstream tyrosine kinase and inhibits STAT3 activation induced by cytokines and c-Src. Molecular modeling indicates that TPCA-1 is well docked into SH2 domain of STAT3 and formed hydrogen bond with Glu594. As a direct inhibitor of STAT3 and IKKs, TPCA-1 inhibits growth of non–small cell lung cancer (NSCLC) with EGFR mutation and potentiates the antitumor effect of gefitinib. For details, see article by Nan and colleagues on page 617.