Highlights of This Issue

SPECIAL FEATURES

CCR Translations

3 CD137 as a Biomarker for Tumor-Reactive T Cells: Finding Gold in the Desert
Yuwen Zhu and Lieping Chen
See related article, p. 44

6 Targeting Metabolic Scavenging in Pancreatic Cancer
Costas A. Lyssiotis and Lewis C. Cantley
See related article, p. 120

CCR Perspectives in Drug Approval

9 Radium Ra 223 Dichloride Injection: U.S. Food and Drug Administration Drug Approval Summary

CCR Drug Updates

15 Trastuzumab Emtansine: A Novel Antibody–Drug Conjugate for HER2-Positive Breast Cancer
Ian Krop and Eric P. Winer

Molecular Pathways

21 Molecular Pathways: SWI/SNF (BAF) Complexes Are Frequently Mutated in Cancer—Mechanisms and Potential Therapeutic Insights
Xiaofeng Wang, Jeffrey R. Haswell, and Charles W.M. Roberts

28 Molecular Pathways: Sterols and Receptor Signaling in Cancer
Linara Gabitova, Andrey Gorin, and Igor Astsaturov

Review

35 Noncoding RNAs in Prostate Cancer: The Long and the Short of It
Eva M. Bolton, Alexandra V. Tuzova, Anna L. Walsh, Thomas Lynch, and Antoinette S. Perry

HUMAN CANCER BIOLOGY

44 CD137 Accurately Identifies and Enriches for Naturally Occurring Tumor-Reactive T Cells in Tumor
Qunrui Ye, De-Gang Song, Mathilde Poussin, Tori Yamamoto, Andrew Best, Chunsheng Li, George Coukos, and Daniel J. Powell Jr.
See related article, p. 3

56 αB-Crystallin: A Novel Regulator of Breast Cancer Metastasis to the Brain

68 A High Frequency of Activating Extracellular Domain ERBB2 (HER2) Mutation in Micropapillary Urothelial Carcinoma

76 HDM2 Regulation by AURKA Promotes Cell Survival in Gastric Cancer
Vikas Sebdev, Ahmed Kanha, Janet Arras, Dunfa Peng, Mohammed Soutto, Jeffrey Ecsedy, Alexander Zaika, Abbas Belkhiri, and Wael El-Rifai

87 Discrete Molecular Classes of Ovarian Cancer Suggestive of Unique Mechanisms of Transformation and Metastases
Nilesh L. Gardi, Tejaswini U. Deshpande, Swapnil C. Kamble, Sagar R. Badhe, and Sharmila A. Bapat

100 Genes Upregulated in Prostate Cancer Reactive Stroma Promote Prostate Cancer Progression In Vivo
Olga Dakhova, David Rowley, and Michael Ittmann

CANCER THERAPY: PRECLINICAL

110 The ATP-Competitive mTOR Inhibitor INK128 Enhances In Vitro and In Vivo Radiosensitivity of Pancreatic Carcinoma Cells
Thomas J. Hayman, Amy Nahb, Barbara A. Rath, Heekyong Bae, Tamakal Kramp, Uma T. Shankavaram, Kevin Camphausen, and Philip J. Tofilon
120 Targeting of NAD Metabolism in Pancreatic Cancer Cells: Potential Novel Therapy for Pancreatic Tumors
Claudia C.S. Chini, Anaitilde M. Gonzalez Guerrico, Veronica Nin, Juliana Camacho-Pereira, Carlos Escande, Maria Thereza Barbosa, and Eduardo N. Chini
See related article, p. 6

131 Interleukin-7 Mediates Selective Expansion of Tumor-redirected Cytotoxic T Lymphocytes (CTLs) without Enhancement of Regulatory T-cell Inhibition
Serena K. Perna, Daria Pagliara, Aruna Mahendravada, Hao Liu, Malcolm K. Brenner, Barbara Savoldo, and Gianpietro Dotti

140 Transient Activation of Hedgehog Pathway Rescued Irradiation-Induced Hyposalivation by Preserving Salivary Stem/Progenitor Cells and Parasympathetic Innervation
Bo Hai, Lizi Zheng Qin, Zhenhua Yang, Qingguo Zhao, Lei Shangguan, Xinyu Ti, Yanqiu Zhao, Sangroh Kim, Dharanipathy Rangaraj, and Fei Liu

151 Gambogic Acid Induces Apoptosis in Imatinib-Resistant Chronic Myeloid Leukemia Cells via Inducing Proteasome Inhibition and Caspase-Dependent Bcr-Abl Downregulation
Xianping Shi, Xin Chen, Xiaofen Li, Xiaoying Lan, Chong Zhao, Shouting Liu, Hongbiao Huang, Ningning Liu, Siyan Liao, Wenbin Song, Ping Zhou, Shunqing Wang, Q. Ping Dou, and Jinbao Liu

164 AXL Is a Key Regulator of Inherent and Chemotherapy-Induced Invasion and Predicts a Poor Clinical Outcome in Early-Stage Colon Cancer
Philip D. Dunne, Darragh C. McArt, Jaime K. Blaney, Munugan Kalimuthu, Samandra Greer, Tingting Wang, Supriya Srivastava, Chee Wee Ong, Ken Arthur, Maurice Loughrey, Keara Redmond, Daniel B. Longley, Manuel Salto-Tellez, Patrick G. Johnston, and Sandra Van Schaeybroeck

176 Erlotinib, Gefitinib, and Vandetanib Inhibit Human Nucleoside Transporters and Protect Cancer Cells from Gemcitabine Cytotoxicity
Vijaya L. Damariju, Tara Scriver, Delores Mowles, Michelle Kuzma, Anderson J. Ryan, Carol E. Cass, and Michael B. Sawyer

187 Neutrophils Promote the Malignant Glioma Phenotype through S100A4
Ji Liang, Yuji Piao, Lindsay Holmes, Gregory N. Fuller, Verlene Henry, Ningyi Tiao, and John F. de Groot

199 Direct Inhibition of Retinoblastoma Phosphorylation by Nimbolide Causes Cell-Cycle Arrest and Suppresses Glioblastoma Growth
Swagata Karkare, Rishi Raj Chhipa, Jane Anderson, Xiaona Liu, Heather Henry, Anjelika Gasilina, Nicholas Nassar, Javeeta Roychoudhury, Jason P Clark, Ashish Kumar, Giovanni M. Paulenti, Pradip K. Ghosh, and Biplab Dasgupta

CANCER THERAPY: CLINICAL

213 A Dose-Escalation Study of SAR3419, an Anti-CD19 Antibody Maytansinoid Conjugate, Administered by Intravenous Infusion Once Weekly in Patients with Relapsed/Refractory B-cell Non-Hodgkin Lymphoma
Vincent Ribrag, Jehan Dupuis, Herve Tilly, Franck Morschhauser, Fabrice Laine, Roch Houot, Corinne Haïoun, Christiane Copie, Andrea Varga, John Lambert, Laurence Hatteville, Samira Ziti-Ljajic, Anne Caron, Sandrine Payrard, and Bertrand Coiffier

221 Long-lasting Disease Stabilization in the Absence of Toxicity in Metastatic Lung Cancer Patients Vaccinated with an Epitope Derived from Indoleamine 2,3 Dioxygenase Trine Zeeberg Iversen, Lotte Engell-Noergaard, Eva Ellebaek, Rikke Andersen, Stine Klaer Larsen, Jon Bjoem, Claus Zeyher, Cécile Gouttefangeas, Birthe Moerk Thomsen, Bente Holm, Per thor Straten, Anders Mellemgaard, Mads Hald Andersen, and Inge Marie Svane

233 Phase I Safety, Pharmacokinetic, and Pharmacodynamic Study of SAR245408 (XL147), an Oral Pan-Class I PI3K Inhibitor, in Patients with Advanced Solid Tumors

246 Tumor Growth Rate Is an Early Indicator of Antitumor Drug Activity in Phase I Clinical Trials
Charles Ferté, Marianna Fernandez, Antoine Hollebeque, Serge Koscienly, Antonin Levy, Christophe Massard, Rastislav Balbeda, Brian Bot, Carlos Gomez-Roca, Clarisse Dromain, Samy Ammari, and Jean-Charles Soria
Plasma microRNA are disease response biomarkers in classical Hodgkin lymphoma.

Kimberley Jones, Jamie P. Nourse, Colm Keane, Atul Bhatnagar, and Maher K. Gandhi

Modeling RAS phenotype in colorectal cancer uncovers novel molecular traits of RAS dependency and improves prediction of response to targeted agents in patients.

Justin Guinney, Charles Ferré, Jonathan Dry, Robert McEwen, Gilles Manceau, KJ Kao, Kai-Ming Chang, Claus Bendtsen, Kevin Hudson, Erich Huang, Brian Dougherty, Michel Ducrœux, Jean-Charles Soria, Stephen Friend, Jonathan Derry, and Pierre Laurent-Puig