MOLECULAR CANCER RESEARCH

TABLE OF CONTENTS

HIGHLIGHTS
515 Selected Articles from This Issue

REVIEW
517 Current Perspectives on Circulating Tumor DNA, Precision Medicine, and Personalized Clinical Management of Cancer
Kelly C.S. Oliveira, Iago Barroso Ramos, Jessica M.C. Silva, Williams Fernandes Barra, Gregory J. Riggins, Vikrant Palande, Catarina Torres Pinho, Milana Frenkel-Morgenstern, Sidney E.B. Santos, Paulo P. Assumpcao, Rommel R. Burbano, and Danielle Queiroz Calcagno

CANCER GENES AND NETWORKS
529 Combination Lenalidomide/Bortezomib Treatment Synergistically Induces Calpain-Dependent Ikaros Cleavage and Apoptosis in Myeloma Cells
Saravanan Ganesan, Hamenth Kumar Palani, Nithya Balasundaram, Sachin David, Anup J. Devasia, Biju George, and Vikram Mathews

537 Diverse BRAF Gene Fusions Confer Resistance to EGFR-Targeted Therapy via Differential Modulation of BRAF Activity
Christina Stangl, Jasmin B. Post, Markus J. van Roosmalen, Nizar Hami, Ingrid Verlaan-Klink, Harmjan R. Vos, Robert M. van Es, Marco J. Koudijis, Emile E. Voest, Hugo J.G. Snippert, and W.P. Kloosterman

549 IGF2 Autocrine-Mediated IGFIR Activation Is a Clinically Relevant Mechanism of Osimertinib Resistance in Lung Cancer
Tadashi Manabe, Hiroyuki Yasuda, Hideki Terai, Harumi Kagiwada, Junko Hamamoto, Toshiki Ebisudani, Keigo Kobayashi, Keita Masuzawa, Shinnosuke Ikemura, Ichiro Kawada, Yuichiro Hayashi, Kazuhiko Fukui, Katsuhisa Horimoto, Koichi Fukunaga, and Kenzo Soejima

560 TGFβ and Hippo Pathways Cooperate to Enhance Sarcomagenesis and Metastasis through the Hyaluronan-Mediated Motility Receptor (HMMR)

CANCER "-OMICS"
574 Multi-Omics Analysis Identifies MGA as a Negative Regulator of the MYC Pathway in Lung Adenocarcinoma

CELL FATE DECISIONS
585 O-GlcNAc Transferase Regulates Cancer Stem-like Potential of Breast Cancer Cells
Neha M. Akella, Giang Le Minh, Lorela Ciraku, Ayonika Mukherjee, Zachary A. Bacigalupa, Dimpi Mukhopadhyay, Valerie L. Sodi, and Mauricio J. Reginato

METABOLISM
599 Metabolic Profiling Reveals a Dependency of Human Metastatic Breast Cancer on Mitochondrial Serine and One-Carbon Unit Metabolism
Albert M. Li, Gregory S. Ducker, Yang Li, Jose A. Seoane, Yiren Xiao, Stavros Melemendis, Yiren Zhou, Ling Liu, Sakari Vanharanta, Edward E. Graves, Erinn B. Rankin, Christina Curtis, Joan Massagué, Joshua D. Rabinowitz, Craig B. Thompson, and Jiangbin Ye
TABLE OF CONTENTS

RNA BIOLOGY

612 AGO2 Mediates MYC mRNA Stability in Hepatocellular Carcinoma
Kai Zhang, Yotsawat Pomyen, Anna E. Barry, Sean P. Martin, Subreen Khatib, Lucy Knight, Marshonna Forgues, Dana A. Dominguez, Ravinder Parhar, Ashesh P. Shah, Adam S. Bodzin, Xin Wei Wang, and Hien Dang

SIGNAL TRANSDUCTION AND FUNCTIONAL IMAGING

623 Combined Src/EGFR Inhibition Targets STAT3 Signaling and Induces Stromal Remodeling to Improve Survival in Pancreatic Cancer
Austin R. Dosch, Xizi Dai, Michelle L. Reyzer, Siddharth Mehra, Supriya Srinivasan, Brent A. Willoebe, Deukwoo Kwon, Niles Shashishkar, Richard Caprioli, Nipun B. Merchant, and Nagaraj S. Nagathihalli

632 SLAMF3-Mediated Signaling via ERK Pathway Activation Promotes Aggressive Phenotypic Behaviors in Multiple Myeloma
Mariko Ishibashi, Risa Takahashi, Asako Tsubota, Makoto Sasaki, Hiroshi Handa, Yoichi Imai, Norina Tanaka, Yutaka Tsukue, Sakae Tanosaki, Shigeki Ito, Toshio Asayama, Mika Sunakawa, Yuta Kaito, Yasuko Kuribayashi-Hamada, Asaka Onodera, Keiichi Moriya, Norio Komatsu, Junji Tanaka, Takeshi Odajima, Hiroki Sugimori, Koiti Inokuchi, and Hideto Tamura

TUMOR MICROENVIRONMENT AND IMMUNOBIOLOGY

644 Hypoxia Attenuates Trastuzumab Uptake and Trastuzumab-Emtansine (T-DM1) Cytotoxicity through Redistribution of Phosphorylated Caveolin-1
Vineesh Indira Chandran, Ann-Sofie Mansson, Magdalena Barbachowska, Myriam Cerezo-Magaña, Björn Nordin, Bharat Joshi, Neelima Koppada, Ola M. Saad, Oleg Gluz, Karolin Isaksen, Signe Borgquist, Karin Jirström, Ivan Robert Nabi, Helena Jernström, and Mattias Belting

657 The Th9 Axis Reduces the Oxidative Stress and Promotes the Survival of Malignant T Cells in Cutaneous T-Cell Lymphoma Patients
Sushant Kumar, Bhavuk Dhamija, Soumitra Marathe, Sarbari Ghosh, Alka Dwivedi, Atharva Karulkar, Neha Sharma, Manju Sengar, Epari Sridhar, Avinash Bonda, Jayashree Thorat, Prashant Tembhare, Tanuja Shet, Sumeet Gujral, Bhausaheb Bagal, Siddhartha Laskar, Hasmukh Jain, and Rahul Purwar

ABOUT THE COVER

Receptor internalization is a critical step in the cellular uptake of antibody-conjugated drugs, and defects in this pathway pose a potential avenue for drug resistance in some cancers. The cover depicts fluorescence microscopy showing phosphorylated Caveolin-1 (pCAV1, red) with the growth factor receptor HER2, labeled here with the anti-HER2 antibody trastuzumab (green; DAPI-labeled nuclei shown in blue). Yellow regions represent areas where HER2 and pCAV1 colocalize, leading to internalization of the trastuzumab-bound HER2 protein. In this issue, Indira Chandran and colleagues demonstrate that hypoxic conditions redistribute pCAV1 and its association with HER2, thereby inhibiting HER2 internalization and, by extension, uptake of trastuzumab-conjugated chemotherapeutics. For more information, see the Highlight on page 515 and the article on page 644.