# MOLECULAR CANCER RESEARCH

## TABLE OF CONTENTS

### HIGHLIGHTS

**741** Selected Articles from This Issue

### MINIREVIEW

**743** Molecular Determinants of Medulloblastoma Metastasis and Leptomeningeal Dissemination

Min Li, Yuhao Deng, and Wangming Zhang

### PERSPECTIVE

**753** Old Dog, New Trick: Type I IFN-Based Treatment for Acute Myeloid Leukemia

Abdullah Alsufyani, Rehab Alanazi, John F. Woolley, and Lekh N. Dahal

### CANCER GENES AND NETWORKS

**757** Adaptor Protein ShcD/SHC4 Interacts with Tie2 Receptor to Synergistically Promote Glioma Cell Invasion

Manali Tilak, Begüm Alural, Sarah E. Wismer, Megan I. Brasheer, Laura A. New, Steven D. Sheridan, Roy H. Perlis, Marc G. Coppolino, Jasmin Lalonde, and Nina Jones

**771** Loss of Aryl Hydrocarbon Receptor Promotes Colon Tumorigenesis in ApcS580/+/KrasG12D/+- Mice

Huajun Han, Laurie A. Davidson, Martha Hensel, Grace Yoon, Kerstin Landrock, Clinton Allred, Arul Jayaraman, Ivan Ivanov, Stephen H. Safe, and Robert S. Chapkin

**784** Functional Hierarchy and Cooperation of EMT Master Transcription Factors in Breast Cancer Metastasis

Joseph B. Addison, Maria A. Voronkova, James H. Fugett, Chen-Chung Lin, Nathaniel C. Linville, Brandon Trinh, Ryan H. Livengood, Matthew B. Smolkin, Michael D. Schaller, J. Michael Ruppert, Elena N. Pugacheva, Chad J. Creighton, and Alexey V. Ivanov

**799** Long Noncoding RNA NEAT1 Acts as a Molecular Switch for BRD4 Transcriptional Activity and Mediates Repression of BRD4/WDR5 Target Genes

Mariaelena Pistoni, Teresa Rossi, Benedetta Donati, Federica Torricelli, Maurizio Polano, and Alessia Ciarrocchi

**812** Crenolanib Regulates ERK and AKT/mTOR Signaling Pathways in RAS/BRAF-Mutated Colorectal Cancer Cells and Organoids

Shiki Fujino, Norikatsu Miyoshi, Aya Ito, Masayoshi Yasui, Masayuki Ohue, Takayuki Ogino, Hidekazu Takahashi, Mamoru Uemura, Chu Matsuda, Tsunekazu Mizushima, Yuichiro Doki, and Hitotoshi Eguchi

**823** Colorectal Cancer-Associated Smad4 R361 Hotspot Mutations Boost Wnt/β-Catenin Signaling through Enhanced Smad4–LEF1 Binding

Claudia B. Lanzau, Priyanka Sehgal, Katharina Hayer, Manuel Torres-Diz, James A. Pippin, Struan F.A. Grant, and Andrei Thomas-Tikhonenko

### CANCER “-OMICS”

**834** Colorectal Cancer-Derived CAT1-Positive Extracellular Vesicles Alter Nitric Oxide Metabolism in Endothelial Cells and Promote Angiogenesis

Atsushi Ikeda, Satoshi Nagayama, Makoto Sumazaki, Makoto Konishi, Risa Fuji, Naomi Saichi, Satoshi Muraoka, Daisuke Saigusa, Hideaki Shimada, Yoshiharu Sakai, and Koji Ueda

**847** Genomically Complex Human Angiosarcoma and Canine Hemangiosarcoma Establish Convergent Angiogenic Transcriptional Programs Driven by Novel Gene Fusions

Jong Hyuk Kim, Kate Megquier, Rachael Thomas, Aaron L. Sarver, Jung Min Song, Yoon Tae Kim, Nuojin Cheng, Ashley J. Schulte, Michael A. Linden, Paari Murugan, LeAnn Oseth, Colleen L. Forster, Ingegerd Elvers, Ross Swofford, Jason Turner-Maier, Elinor K. Karlsson, Matthew Breen, Kerstin Lindblad-Toh, and Jaen F. Modiano
TABLE OF CONTENTS

CELL FATE DECISIONS

862 Palbociclib Renders Human Papilloma Virus–Negative Head and Neck Squamous Cell Carcinoma Vulnerable to the Senolytic Agent Navitoclax
Nicholas J. Gadsden, Cory D. Fulcher, Daniel Li, Nitisha Shrivastava, Carlos Thomas, Jeffrey E. Segall, Michael B. Prystowsky, Nicolas F. Schlecht, Evripidis Gavathiotis, and Thomas J. Ow

874 Metabolic Regulator IAPP (Amylin) Is Required for BRAF and RAS Oncogene-Induced Senescence
Sam Garnett, Angeline de Bruyns, Veronique Provencher-Tom, Kendall Dutchak, Ran Shu, and David Dankort

886 Selective ERBB2 and BCL2 Inhibition Is Synergistic for Mitochondrial-Mediated Apoptosis in MDS and AML Cells

GENOME MAINTENANCE

900 The Bromodomain Inhibitor PFI-3 Sensitizes Cancer Cells to DNA Damage by Targeting SWI/SNF
Daye Lee, Da-Yeon Lee, You-Son Hwang, Hye-Ran Seo, Shin-Ai Lee, and Jongbum Kwon

SIGNAL TRANSDUCTION AND FUNCTIONAL IMAGING

913 Preclinical Evaluation of Gilteritinib on NPM1-ALK-Driven Anaplastic Large Cell Lymphoma Cells

921 Silencing of SmgGDS, a Novel mTORC1 Inducer That Binds to RHEBs, Inhibits Malignant Mesothelioma Cell Proliferation
Tatsuhiro Sato, Satomi Mukai, Haruna Ikeda, Emi Mishiro-Sato, Ken Akao, Toshiyuki Kobayashi, Okio Hino, Wataru Shimono, Yoshio Shibagaki, Seisuke Hattori, and Yoshitaka Sekido

ABOUT THE COVER

Gliomas are marked by a diffuse pattern of tumor cell invasion into the cerebrum, which contributes to poor outcomes in patients with advanced disease. The cover depicts a cross-section of a cerebral organoid co-cultured with GFP-labeled U87 glioma cell spheroids stably expressing adaptor protein ShcD and receptor tyrosine kinase Tie2. The glioma cells (green) can be observed invading the organoid model, stained with neuronal marker Tuj1 (magenta). The authors show that interactions between ShcD and Tie2 trigger signaling events within glioma cells that promote invasiveness and could be targeted for therapeutic benefit. For more information, see the article on page 757.