

# The Journal of PHARMACOLOGY

## And Experimental Therapeutics

A Publication of the American Society for Pharmacology and Experimental Therapeutics

May 2017

Vol. 361, No. 2

### Contents

#### CARDIOVASCULAR

- Dual Mechanism for Inhibition of Inwardly Rectifying Kir2.x Channels by Quinidine Involving Direct Pore Block and PIP<sub>2</sub>-interference 209  
*Christoph Koepple, Daniel Scherer, Claudia Seyler, Eberhard Scholz, Dierk Thomas, Hugo A. Katus, and Edgar Zitron*

- Endothelin ET<sub>A</sub> Receptor Blockade, by Activating ET<sub>B</sub> Receptors, Increases Vascular Permeability and Induces Exaggerated Fluid Retention 322  
*Magali Vercauteren, Frederic Trens, Anne Pasquali, Christophe Cattaneo, Daniel S. Strasser, Patrick Hess, Marc Iglarz, and Martine Clozel*

- Low-Volume Resuscitation for Hemorrhagic Shock: Understanding the Mechanism of PEG-20k 334  
*Valerie Plant, Dan W. Parrish, Ashley Limkemann, Paula Ferrada, Michel Aboutanos, and Martin J. Mangino*

#### CELLULAR AND MOLECULAR

- Label-Free Dynamic Mass Redistribution Reveals Low-Density, Prosurvival  $\alpha_{1B}$ -Adrenergic Receptors in Human SW480 Colon Carcinoma Cells 219  
*Dorothy-Ann Harris, Ji-Min Park, Kyung-Soon Lee, Cong Xu, Nephi Stella, and Chris Hague*

#### CHEMOTHERAPY, ANTIBIOTICS, AND GENE THERAPY

- Functional, Metabolic, and Dynamic Mitochondrial Changes in the Rat Cirrhosis-Hepatocellular Carcinoma Model and the Protective Effect of IFC-305 292  
*Enrique Chávez, María Guadalupe Lozano-Rosas, Mariana Domínguez-López, Gabriela Velasco-Loyden, Jesús Rafael Rodríguez-Aguilera, Concepción José-Nuñez, Marietta Tuena de Gómez-Puyou, and Victoria Chagoya de Sánchez*

#### DRUG DISCOVERY AND TRANSLATIONAL MEDICINE

- Selective Activation of AMPK  $\beta$ 1-Containing Isoforms Improves Kidney Function in a Rat Model of Diabetic Nephropathy 303  
*Christopher T. Salatto, Russell A. Miller, Kimberly O. Cameron, Emily Cokorinos, Allan Reyes, Jessica Ward, Matthew F. Calabrese, Ravi G. Kurumbail, Francis Rajamohan, Amit S. Kalgutkar, David A. Tess, Andre Shavnya, Nathan E. Genung, David J. Edmonds, Aditi Jatkar, Benjamin S Maciejewski, Marina Amaro, Harmeet Gandhok, Mara Monetti, Katherine Cialdea, Eliza Bollinger, John M. Kreeger, Timothy M. Coskran, Alan C. Opsahl, Germaine G. Boucher, Morris J. Birnbaum, Paul DaSilva-Jardine, and Tim Rolph*

- Dual Inhibition of Bruton's Tyrosine Kinase and Phosphoinositide-3-Kinase p110 $\delta$  as a Therapeutic Approach to Treat Non-Hodgkin's B Cell Malignancies 312  
*Jennifer Alfaro, Felipe Pérez de Arce, Sebastián Belmar, Glenda Fuentealba, Patricio Avila, Gonzalo Ureta, Camila Flores, Claudia Acuña, Luz Delgado, Diana Gaete, Brahmam Pujala, Anup Barde, Anjan K. Nayak, T. V. R. Upendra, Dhananjay Patel, Shailender Chauhan, Vijay K. Sharma, Stacy Kanno, Ramona G. Almiraz, David T. Hung, Sarvajit Chakravarty, Roopa Rai, Sebastián Bernales, Kevin P. Quinn, Son M. Pham, and Emma McCullagh*

#### GASTROINTESTINAL, HEPATIC, PULMONARY, AND RENAL

- Mogroside IIIA, a Novel Anti-Fibrotic Compound, Reduces Pulmonary Fibrosis through Toll-Like Receptor 4 Pathways 268  
*Lijun Tao, Jinyu Yang, Fengyan Cao, Haifeng Xie, Mian Zhang, Yanqing Gong, and Chaofeng Zhang*

- Pharmacologic Profile of Naloxegol, a Peripherally Acting  $\mu$ -Opioid Receptor Antagonist, for the Treatment of Opioid-Induced Constipation 280  
*Eike Floettmann, Khanh Bui, Mark Sostek, Kemal Payza, and Michael Eldon*

## INFLAMMATION, IMMUNOPHARMACOLOGY, AND ASTHMA

- ▣ Evaluation of JAK3 Biology in Autoimmune Disease Using a Highly Selective, Irreversible JAK3 Inhibitor 229  
*Fiona Elwood, David J. Witter, Jennifer Piesvaux, Brian Kraybill, Nathan Bays, Carla Alpert, Peter Goldenblatt, Yujie Qu, Irena Ivanovska, Hyun-Hee Lee, Chi-Sung Chiu, Hao Tang, Mark E. Scott, Sujal V. Deshmukh, Mark Zielstorff, Alan Byford, Kalyan Chakravarthy, Lauren Dorosh, Alexey Rivkin, Joel Klappenbach, Bo-Sheng Pan, Ilona Kariv, Christopher Dinsmore, Deborah Slipetz, and Peter J. Dandliker*

## METABOLISM, TRANSPORT, AND PHARMACOGENOMICS

- ▣ Comprehensive Characterization of Mouse UDP-Glucuronosyltransferase (Ugt) Belonging to the Ugt2b Subfamily: Identification of Ugt2b36 as the Predominant Isoform Involved in Morphine Glucuronidation 199  
*Ayumi Kurita, Yuu Miyauchi, Shin'ichi Ikushiro, Peter I. Mackenzie, Hideyuki Yamada, and Yuji Ishii*
- ▣ Physiologically Based Pharmacokinetic Model of All-*trans*-Retinoic Acid with Application to Cancer Populations and Drug Interactions 246  
*Jing Jing, Cara Nelson, Jisun Paik, Yoshiyuki Shirasaka, John K. Amory, and Nina Isoherranen*

## TOXICOLOGY

- Nrf2-Dependent and -Independent Effects of *tert*-Butylhydroquinone, CDDO-Im, and H<sub>2</sub>O<sub>2</sub> in Human Jurkat T Cells as Determined by CRISPR/Cas9 Gene Editing 259  
*Joseph W. Zagorski, Tyler P. Maser, Karen T. Liby, and Cheryl E. Rockwell*

## ERRATUM

- Correction to: "Thermolytic Degradation of Synthetic Cannabinoids: Chemical Exposures and Pharmacological Consequences." 245

▣ Supplemental material is available at [jpet.aspetjournals.org](http://jpet.aspetjournals.org).

*About the cover:* No synergy observed in pSTAT5 PBMC assay in response to IL-7 with cross-titrated JAK1 and JAK3 inhibitors. See the article by Elwood et al. ([dx.doi.org/10.1124/jpet.116.239723](https://doi.org/10.1124/jpet.116.239723)).