

# The Journal of PHARMACOLOGY

## And Experimental Therapeutics

A Publication of the American Society for Pharmacology and Experimental Therapeutics

January 2017

Vol. 360, No. 1

### Contents

#### MINIREVIEWS

- Estrogen Signaling as a Therapeutic Target in Neurodevelopmental Disorders 48  
*Amanda Crider and Anilkumar Pillai*
- Oxidative Stress and the Central Nervous System 201  
*Samina Salim*

#### CARDIOVASCULAR

- ☐ Xanthohumol Modulates Calcium Signaling in Rat Ventricular Myocytes: Possible Antiarrhythmic Properties 239  
*Juan Jose Arnaiz-Cot, Lars Cleemann, and Martin Morad*

#### CELLULAR AND MOLECULAR

- ☐ Mutation-Induced Functional Alterations of CCR6 106  
*Bina Julian, Kevin Gao, Benjamin N. Harwood, Martin Beinborn, and Alan S. Kopin*

#### CHEMOTHERAPY, ANTIBIOTICS, AND GENE THERAPY

- Alternative RNA Processing of Topoisomerase II $\alpha$  in Etoposide-Resistant Human Leukemia K562 Cells: Intron Retention Results in a Novel C-Terminal Truncated 90-kDa Isoform 152  
*Ragu Kanagasabai, Lucas Serdar, Soumendrakrishna Karmahapatra, Corey A. Kientz, Justin Ellis, Mary K. Ritke, Terry S. Elton, and Jack C. Yalowich*
- ☐ Quantitative Analyses of Synergistic Responses between Cannabidiol and DNA-Damaging Agents on the Proliferation and Viability of Glioblastoma and Neural Progenitor Cells in Culture 215  
*Liing Deng, Lindsay Ng, Tatsuya Ozawa, and Nephi Stella*

#### DRUG DISCOVERY AND TRANSLATIONAL MEDICINE

- ☐ Selective Inhibition of Autotaxin Is Efficacious in Mouse Models of Liver Fibrosis 1  
*Gretchen Bain, Kristen E. Shannon, Fei Huang, Janice Darlington, Lance Goulet, Patricia Prodanovich, Gina L. Ma, Angelina M. Santini, Adam J. Stein, Dave Lonergan, Christopher D. King, Imelda Calderon, Andiliy Lai, John H. Hutchinson, and Jilly F. Evans*
- An HDAC6 Inhibitor Confers Protection and Selectively Inhibits B-Cell Infiltration in DSS-Induced Colitis in Mice 140  
*Anh Do, Robert C. Reid, Rink-Jan Lohman, Matthew J. Sweet, David P. Fairlie, and Abishek Iyer*

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

- Silencer-of-Death Domain Mediates Acid-Induced Decrease in Cell Apoptosis in Barrett's Associated Esophageal Adenocarcinoma Cells 14  
*Dan Li, Jie Hong, and Weibiao Cao*
- Urinary Excretion Contributes to Long-Lasting Blockade of Bladder Muscarinic Receptors by Imidafenacin: Effect of Bilateral Ureteral Ligation 69  
*Yoshihiko Ito, Shiori Kuraoka, Soma Endo, Ayaka Takahashi, Satomi Onoue, and Shizuo Yamada*
- ☐ Disrupted Murine Gut-to-Human Liver Signaling Alters Bile Acid Homeostasis in Humanized Mouse Liver Models 174  
*Edwin C. Y. Chow, Holly P. Quach, Yueping Zhang, Jason Z. Y. Wang, David C. Evans, Albert P. Li, Jose Silva, Rommel G. Tirona, Yurong Lai, and K. Sandy Pang*

## INFLAMMATION, IMMUNOPHARMACOLOGY, AND ASTHMA

- NOX1/NADPH Oxidase Expressed in Colonic Macrophages Contributes to the Pathogenesis of Colonic Inflammation in Trinitrobenzene Sulfonic Acid-Induced Murine Colitis 192  
*Haruka Yokota, Ayaka Tsuzuki, Yuki Shimada, Azusa Imai, Daichi Utsumi, Takuya Tsukahara, Misaki Matsumoto, Kikuko Amagase, Kazumi Iwata, Akio Nakamura, Chihiro Yabe-Nishimura, and Shinichi Kato*

## METABOLISM, TRANSPORT, AND PHARMACOGENOMICS

- Role of Equilibrative Nucleobase Transporter 1/SLC43A3 as a Ganciclovir Transporter in the Induction of Cytotoxic Effect of Ganciclovir in a Suicide Gene Therapy with Herpes Simplex Virus Thymidine Kinase 59  
*Junji Furukawa, Katsuhisa Inoue, Kinya Ohta, Tomoya Yasujima, Yoshihisa Mimura, and Hiroaki Yuasa*
- Quantitative Assessment of Population Variability in Hepatic Drug Metabolism Using a Perfused Three-Dimensional Human Liver Microphysiological System 95  
*N. Tsamandouras, T. Kostrzewski, C. L. Stokes, L. G. Griffith, D. J. Hughes, and M. Cirit*
- Predictors of Variation in CYP2A6 mRNA, Protein, and Enzyme Activity in a Human Liver Bank: Influence of Genetic and Nongenetic Factors 129  
*Julie-Anne Tanner, Bhagwat Prasad, Katrina G. Claw, Patricia Stapleton, Amarjit Chaudhry, Erin G. Schuetz, Kenneth E. Thummel, and Rachel F. Tyndale*
- Low Potential of Basinglurant to Be Involved in Drug-Drug Interactions: Influence of Non-Michaelis-Menten P450 Kinetics on Fraction Metabolized 164  
*Stephen Fowler, Elena Guerini, NaHong Qiu, Yumi Cleary, Neil Parrott, Gerard Greig, and Navita L. Mallalieu*
- Hormonal and Chemical Regulation of the Glut9 Transporter in Mice 206  
*Pengli Bu, Yuan Le, Yue Zhang, and Xingguo Cheng*

## NEUROPHARMACOLOGY

- The M<sub>1</sub> Muscarinic Receptor Antagonist VU0255035 Delays the Development of Status Epilepticus after Organophosphate Exposure and Prevents Hyperexcitability in the Basolateral Amygdala 23  
*Steven L. Miller, Vassiliki Aroniadou-Anderjaska, Volodymyr I. Pidoplichko, Taiza H. Figueiredo, James P. Apland, Jishnu K. S. Krishnan, and Maria F. M. Braga*
- Structure-Activity Relationships of Substituted Cathinones, with Transporter Binding, Uptake, and Release 33  
*Amy J. Eshleman, Katherine M. Wolfrum, John F. Reed, Sunyoung O. Kim, Tracy Swanson, Robert A. Johnson, and Aaron Janowsky*
- TAK-063, a Novel Phosphodiesterase 10A Inhibitor, Protects from Striatal Neurodegeneration and Ameliorates Behavioral Deficits in the R6/2 Mouse Model of Huntington's Disease 75  
*Akina Harada, Kazunori Suzuki, and Haruhide Kimura*
- Ontogeny of Norepinephrine Transporter Expression and Antidepressant-Like Response to Desipramine in Wild-Type and Serotonin Transporter Mutant Mice 84  
*Nathan C. Mitchell, Melodi A. Bowman, Georgianna G. Gould, Wouter Koek, and Lynette C. Daws*
- An Allosteric Potentiator of the Dopamine D1 Receptor Increases Locomotor Activity in Human D1 Knock-In Mice without Causing Stereotypy or Tachyphylaxis 117  
*Kjell A. Svensson, Beverly A. Heinz, John M. Schaus, James P. Beck, Junliang Hao, Joseph H. Krushinski, Matthew R. Reinhard, Michael P. Cohen, Sarah L. Hellman, Brian G. Getman, Xushan Wang, Michelle M. Menezes, Deanna L. Maren, Julie F. Falcone, Wesley H. Anderson, Rebecca A. Wright, S. Michelle Morin, Kelly L. Knopp, Benjamin L. Adams, Borys Rogovoy, Ilya Okun, Todd M. Suter, Michael A. Statnick, Donald R. Gehlert, David L. Nelson, Virginia L. Lucaites, Renee Emkey, Neil W. DeLapp, Todd R. Wiernicki, Jeffrey W. Cramer, Charles R. Yang, and Robert F. Bruns*


## TOXICOLOGY

- Bruton's Tyrosine Kinase Small Molecule Inhibitors Induce a Distinct Pancreatic Toxicity in Rats 226  
*Rebecca I. Erickson, Leah K. Schutt, Jacqueline M. Tarrant, Michelle McDowell, Lichuan Liu, Adam R. Johnson, Sock-Cheng Lewin-Koh, Maj Hedehus, Jed Ross, Richard A. D. Carano, Karin Staflin, Fiona Zhong, James J. Crawford, Shelly Zhong, Karin Reif, Arna Katewa, Harvey Wong, Wendy B. Young, Donna M. Dambach, and Dinah L. Misner*

## ERRATUM

Correction to: "A Small Molecule with Anticancer and Antimetastatic Activities Induces Rapid Mitochondrial-Associated Necrosis in Breast Cancer

225

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

*About the cover:* Autoradiograms of  $^3\text{H}$ -SCH23390 binding to coronal sections from brains of wild-type and hD1 mice. See the article by Svensson et al. ([dx.doi.org/10.1124/jpet.116.236372](https://doi.org/10.1124/jpet.116.236372)).