

DRUG METABOLISM AND DISPOSITION

A Publication of the American Society for Pharmacology and Experimental Therapeutics

October 2015

Vol. 43, No. 10

CONTENTS

SPECIAL SECTION ON DRUG METABOLISM AND THE MICROBIOME

Drug Metabolism by the Host and Gut Microbiota: A Partnership or Rivalry?. *Hollie I. Swanson* **1499**

Review: Mechanisms of How the Intestinal Microbiota Alters the Effects of Drugs and Bile Acids. *Curtis D. Klaassen and Julia Yue Cui* **1505**

Indole and Tryptophan Metabolism: Endogenous and Dietary Routes to Ah Receptor Activation. *Troy D. Hubbard, Iain A. Murray, and Gary H. Perdew* **1522**

Ⓢ Aryl Hydrocarbon Receptor Activity of Tryptophan Metabolites in Young Adult Mouse Colonocytes. *Yating Cheng, Un-Ho Jin, Clint D. Allred, Arul Jayaraman, Robert S. Chapkin, and Stephen Safe* **1536**

Ⓢ Importance of Large Intestine in Regulating Bile Acids and Glucagon-Like Peptide-1 in Germ-Free Mice. *Felcy Pavithra Selwyn, Iván L. Csanaky, Youcai Zhang, and Curtis D. Klaassen* **1544**

Microbiome Disturbances and Autism Spectrum Disorders. *Cheryl S. Rosenfeld* **1557**

Ⓢ RNA-Seq Quantification of Hepatic Drug Processing Genes in Germ-Free Mice. *Felcy Pavithra Selwyn, Julia Yue Cui, and Curtis D. Klaassen* **1572**

Gut Microbiota-Mediated Drug-Antibiotic Interactions. *Dong-Hyun Kim* **1581**

Ⓢ Intestinal Absorption and Metabolism of Epimedium Flavonoids in Osteoporosis Rats. *Jing Zhou, Yi Hua Ma, Zhong Zhou, Yan Chen, Ying Wang, and Xia Gao* **1590**

Ⓢ The Presystemic Interplay between Gut Microbiota and Orally Administered Calycosin-7-*O*- β -D-Glucoside. *Jian-Qing Ruan, Shang Li, Ya-Ping Li, Wen-Jin Wu, Simon Ming-Yuen Lee, and Ru Yan* **1601**

Defining the Role of Gut Bacteria in the Metabolism of Deleobuvir: In Vitro and In Vivo Studies. *Michelle McCabe, Rucha S. Sane, Monica Keith-Luzzi, Jun Xu, Illeaniz King, Andrea Whitcher-Johnstone, Nicholas Johnstone, Donald J. Tweedie, and Yongmei Li* **1612**

Investigation of Host–Gut Microbiota Modulation of Therapeutic Outcome. *Lian Yee Yip and Eric Chun Yong Chan* **1619**

SHORT COMMUNICATION

Ⓢ Making Transporter Models for Drug–Drug Interaction Prediction Mobile. *Sean Ekins, Alex M. Clark, and Stephen H. Wright* **1642**

ARTICLES

Ⓢ Novel Marmoset Cytochrome P450 2C19 in Livers Efficiently Metabolizes Human P450 2C9 and 2C19 Substrates, *S*-Warfarin, Tolbutamide, Flurbiprofen, and Omeprazole. *Shotaro Uehara, Yasuhiro Uno, Takashi Inoue, Mirai Kawano, Makiko Shimizu, Akiko Toda, Masahiro Utoh, Erika Sasaki, and Hiroshi Yamazaki* **1408**

Ⓢ Prediction of Drug-Drug Interactions with Crizotinib as the CYP3A Substrate Using a Physiologically Based Pharmacokinetic Model. *Shinji Yamazaki, Theodore R. Johnson, and Bill J. Smith* **1417**

Multidrug Resistance-Associated Protein 4 (MRP4/ABCC4) Controls Efflux Transport of Hesperetin Sulfates in Sulfotransferase 1A3–Overexpressing Human Embryonic Kidney 293 Cells. *Hua Sun, Xiao Wang, Xiaotong Zhou, Danyi Lu, Zhiguo Ma, and Baojian Wu* **1430**

Ⓢ Lipid Peroxide–Mediated Oxidative Rearrangement of the Pyrazinone Carboxamide Core of Neutrophil Elastase Inhibitor AZD9819 in Blood Plasma Samples. *Chungang Gu, Richard J. Lewis, Andrew S. Wells, Per H. Svensson, Vinayak P. Hosagrahara, Eskil Johnsson, and Gösta Hallström* **1441**

Continued on next page

| | |
|---|------|
| Single-Nucleotide Polymorphisms in Cytochrome P450 2E1 (CYP2E1) 3'-Untranslated Region Affect the Regulation of CYP2E1 by miR-570. <i>Masataka Nakano, Takuya Mohri, Tatsuki Fukami, Masataka Takamiya, Yasuhiro Aoki, Howard L. McLeod, and Miki Nakajima</i> | 1450 |
| ▣ Role of Specificity Protein 1, Hepatocyte Nuclear Factor 1 α , and Pregnane X Receptor in the Basal and Rifampicin-Induced Transcriptional Regulation of Porcine Cytochrome P450 3A46. <i>Linfeng Dong, Qingmei Chen, Xin Liu, Jikai Wen, Jun Jiang, and Yiqun Deng</i> | 1458 |
| ▣ Inhibition of Human UDP-Glucuronosyltransferase Enzymes by Canagliflozin and Dapagliflozin: Implications for Drug-Drug Interactions. <i>Attarat Pattanawongsa, Nuy Chau, Andrew Rowland, and John O. Miners</i> | 1468 |
| Disposition of Basal Insulin Peglispro Compared with 20-kDa Polyethylene Glycol in Rats Following a Single Intravenous or Subcutaneous Dose. <i>Mary Pat Knadler, Bernice B. Ellis, Patricia L. Brown-Augsburger, Anthony T. Murphy, Jennifer A. Martin, and Victor J. Wroblewski</i> | 1477 |
| ▣ CYP3A Activity and Expression in Nonalcoholic Fatty Liver Disease. <i>Sarah J. Woolsey, Sara E. Mansell, Richard B. Kim, Rommel G. Tirona, and Melanie D. Beaton</i> | 1484 |
| In Vitro and In Vivo Characterization of Reactive Intermediates of Corynoline. <i>Xu Mao, Ying Peng, and Jiang Zheng</i> | 1491 |
| ▣ Human Liver Cytochrome P450 Enzymes and Microsomal Thiol Methyltransferase Are Involved in the Stereoselective Formation and Methylation of the Pharmacologically Active Metabolite of Clopidogrel. <i>Cai Liu, Zhaoqiang Chen, Kan Zhong, Liang Li, Weiliang Zhu, Xiaoyan Chen, and Dafang Zhong</i> | 1632 |

▣ Supplemental material is available online at <http://dmd.aspetjournals.org>.

About the cover: A representation of the emerging interplay that exists between the gut microbiota and liver in mediating drug metabolism. Lower left image by N.R. Fuller of Sayo-Art LLC. Digestive system image by Alena Hovorkova/Shutterstock.com.