

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

Contents (cont'd.)

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 Pregnan 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.