

# DRUG METABOLISM AND DISPOSITION

A Publication of the American Society for Pharmacology and Experimental Therapeutics

October 2023

Vol. 51, No. 10

## Contents

### SPECIAL SECTION ON NEW AND EMERGING AREAS AND TECHNOLOGIES IN DRUG METABOLISM AND DISPOSITION, PART I

#### 50TH ANNIVERSARY CELEBRATION COLLECTION

Special Section on New and Emerging Areas and Technologies in Drug Metabolism and Disposition, Part I—Editorial <i>Xiao-bo Zhong, Yurong Lai, and Xinxin Ding</i>	1227
☐ NEAT1_2 and DAZAP1, Paraspeckle Components, Interact with PXR to Negatively Regulate CYP3A4 Induction <i>Rei Mitamura, Masataka Nakano, Motoki Isono, Kiamu Kurosawa, Tatsuki Fukami, and Miki Nakajima</i>	1230
Novel Approaches to Characterize Individual Drug Metabolism and Advance Precision Medicine <i>Klarissa D. Jackson, Brahim Achour, Jonghwa Lee, Raeanne M. Geffert, Jessica L. Beers, and Bethany D. Latham</i>	1238
Fluorescence-Based High-Throughput Assays for Investigating Cytochrome P450 Enzyme-Mediated Drug–Drug Interactions <i>Rongjing He, Ziru Dai, Moshe Finel, Feng Zhang, Dongzhu Tu, Ling Yang, and Guangbo Ge</i>	1254
Recent Advances in Mass Spectrometry-Based Spatially Resolved Molecular Imaging of Drug Disposition and Metabolomics <i>Yu Chen, Ying Liu, Ximei Li, Yan He, Weiwei Li, Ying Peng, and Jiang Zheng</i>	1273
☐ Identification of a Discrete Diglucuronide of GDC-0810 in Human Plasma after Oral Administration <i>Chenghong Zhang, Dian Su, Edna F. Choo, Lichuan Liu, Sudheer Bobba, Jamie D. Jorski, Quynh Ho, Jing Wang, Jane R. Kenny, S. Cyrus Khojasteh, and Donglu Zhang</i>	1284
Challenges and Opportunities in P450 Research on the Eye <i>Irina A. Pikuleva</i>	1295
☐ Use of Traditional and Proteomic Methods in the Assessment of a Preclinical Model of Preeclampsia <i>Wanying Dai, Angela Pollinzi, and Micheline Piquette-Miller</i>	1308
☐ The Important Role of Transporter Structures in Drug Disposition, Efficacy, and Toxicity <i>Tingting Fu, Su Zeng, Qingchuan Zheng, and Feng Zhu</i>	1316
Bioanalytical Assays for Pharmacokinetic and Biodistribution Study of Antibody-Drug Conjugates <i>Lei Yin, Aiyun Xu, Yumeng Zhao, and Jingkai Gu</i>	1324

#### ARTICLES

☐ The Absolute Bioavailability and Absorption, Metabolism, and Excretion of Ipatasertib, a Potent and Highly Selective Protein Kinase B (Akt) Inhibitor <i>Ryan H. Takahashi, Vikram Malhi, Bianca M. Liederer, Sungjoon Cho, Yuzhong Deng, Brian Dean, James Nugteren, Edward Yost, Mohammad A. Al-Sayah, Rucha Sane, Smita Kshirsagar, Shuguang Ma, and Luna Musib</i>	1332
Interaction of Human OATP1B1 with PDZK1 Is Required for Its Trafficking to the Hepatocyte Plasma Membrane <i>Pijun Wang, John W. Murray, and Allan W. Wolkoff</i>	1342

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

About the cover: “Biomarkers of drug metabolism phenotype to facilitate precision dosing.” See the article by Jackson et al. ([dx.doi.org/10.1124/dmd.122.001066](https://doi.org/10.1124/dmd.122.001066)).

☐	In Vivo Metabolite Profiles of an <i>N</i> -Acetylgalactosamine–Conjugated Antisense Oligonucleotide AZD8233 Using Liquid Chromatography High-Resolution Mass Spectrometry: A Cross-Species Comparison in Animals and Humans <i>Xue-Qing Li, Marie Elebring, Anders Dahlén, and Lars Weidolf</i>	1350
☐	Dissecting Parameters Contributing to the Underprediction of Aldehyde Oxidase-Mediated Metabolic Clearance of Drugs <i>Sandhya Subash, Dilip K. Singh, Deepak S. Ahire, S. Cyrus Khojasteh, Bernard P. Murray, Michael A. Zientek, Robert S. Jones, Priyanka Kulkarni, Bill J. Smith, Scott Heyward, Ciarán N. Cronin, and Bhagwat Prasad</i>	1362
☐	Impact of Heterotropic Allosteric Modulation on the Time-Dependent Inhibition of Cytochrome P450 3A4 <i>Luc R.A. Rougée, David W. Bedwell, Kasi Hansen, Trent L. Abraham, and Stephen D. Hall</i>	1372
☐	Interpretation of Protein-Mediated Uptake of Statins by Hepatocytes Is Confounded by the Residual Statin-Protein Complex <i>Mengyue Yin, Kazuya Ishida, Xiaomin Liang, Yurong Lai, and Jashvant D. Unadkat</i>	1381
☐	Analysis of the Bile Acid Composition in a Fibroblast Growth Factor 19-Expressing Liver-Humanized Mouse Model and Its Use for CYP3A4-Mediated Drug–Drug Interaction Studies <i>Mario Mezler, Robert S. Jones, Dewakar Sangaraju, Devorah C. Goldman, Matthew Hoffmann, Aki T. Heikkinen, Janne Mannila, Jae H. Chang, Lander Foquet, Sandeepraj Pusalkar, Paresh P. Chothe, and Nico Scheer</i>	1391
☐	Utility of Minimal Physiologically Based Pharmacokinetic Models for Assessing Fractional Distribution, Oral Absorption, and Series-Compartment Models of Hepatic Clearance <i>Xiaonan Li and William J. Jusko</i>	1403
☐	The Metabolism of Lufotrelvir, a Prodrug Investigated for the Treatment of SARS-COV2 in Humans Following Intravenous Administration <i>Narayan Cheruvu, Esther van Duijn, Pieter A. Spigt, Ioana M. Barbu, Sima S. Toussi, Klaas Schildknecht, Rhys M. Jones, and R. Scott Obach</i>	1419
☐	Prediction of Human Pharmacokinetics of Phosphorodiamidate Morpholino Oligonucleotides in Duchenne Muscular Dystrophy Patients Using Viltolarsen <i>Shunji Imai, Yusuke Suda, Jumpei Mori, Yoshihiro Sasaki, Tetsuhiro Yamada, and Kazutomi Kusano</i>	1428