

# DRUG METABOLISM AND DISPOSITION

A Publication of the American Society for Pharmacology and Experimental Therapeutics

December 2015

Vol. 43, No. 12

## CONTENTS

### MINIREVIEW

Low-Turnover Drug Molecules: A Current Challenge for Drug Metabolism Scientists. *J. Matthew Hutzler, Barbara J. Ring, and Shelby R. Anderson . . . . .* **1917**

### SHORT COMMUNICATIONS

Elucidating the Mechanisms of Formation for Two Unusual Cytochrome P450–Mediated Fused Ring Metabolites of GDC-0623, a MAPK/ERK Kinase Inhibitor. *Ryan H. Takahashi, Shuguang Ma, Sarah J. Robinson, Qin Yue, Edna F. Choo, and S. Cyrus Khojasteh . . . . .* **1929**

The Nonspecific Binding of Tyrosine Kinase Inhibitors to Human Liver Microsomes. *Kushari Burns, Pramod C. Nair, Andrew Rowland, Peter I. Mackenzie, Kathleen M. Knights, and John O. Miners . . . . .* **1934**

Functional Characterization of Carrier-Mediated Transport of Pravastatin across the Blood-Retinal Barrier in Rats. *Shinobu Fujii, Chikako Setoguchi, Kouichi Kawazu, and Ken-ichi Hosoya . . . . .* **1956**

Leflunomide Induces Pulmonary and Hepatic CYP1A Enzymes via Aryl Hydrocarbon Receptor. *Ananddeep Patel, Shaojie Zhang, Maturu Paramahamsa, Weiwu Jiang, Lihua Wang, Bhagavatula Moorthy, and Binoy Shivanna . . . . .* **1966**

### ARTICLES

Xenobiotic Metabolism in Mice Lacking the UDP-Glucuronosyltransferase 2 Family. *Matthew J. Fay, My Trang Nguyen, John N. Snouwaert, Rebecca Dye, Delores J. Grant, Wanda M. Bodnar, and Beverly H. Koller . . . . .* **1838**

Organic Anion Transporter 1 Is Inhibited by Multiple Mechanisms and Shows a Transport Mode Independent of Exchange. *Adam G. Hotchkiss, Tiandai Gao, Usman Khan, Liam Berrigan, Mansong Li, Leslie Ingraham, and Ryan M. Pelis . . .* **1847**

Shared Ligands Between Organic Anion Transporters (OAT1 and OAT6) and Odorant Receptors. *Wei Wu, Kevin T. Bush, Henry C. Liu, Christopher Zhu, Ruben Abagyan, and Sanjay K. Nigam . . . . .* **1855**

Chiral Plasma Pharmacokinetics of 3,4-Methylenedioxymethamphetamine and its Phase I and II Metabolites following Controlled Administration to Humans. *Andrea E. Steuer, Corina Schmidhauser, Yasmin Schmid, Anna Rickli, Matthias E. Liechti, and Thomas Kraemer . . . . .* **1864**

Atenolol Renal Secretion Is Mediated by Human Organic Cation Transporter 2 and Multidrug and Toxin Extrusion Proteins. *Jia Yin, Haichuan Duan, Yoshiyuki Shirasaka, Bhagwat Prasad, and Joanne Wang . . . . .* **1872**

Insights into the Impact of Heterogeneous Glycosylation on the Pharmacokinetic Behavior of Follistatin-Fc–Based Biotherapeutics. *Amita Datta-Mannan, Lihua Huang, Jennifer Pereira, Benjamin Yaden, Andrew Korytko, and Johnny E. Croy . . . . .* **1882**

Time-Dependent Inhibition of CYP2C19 by Isoquinoline Alkaloids: In Vitro and In Silico Analysis. *Kaisa A. Salminen, Minna Rahnasto-Rilla, Raija Väänänen, Peter Imming, Achim Meyer, Aline Horling, Antti Poso, Tuomo Laitinen, Hannu Raunio, and Maija Lahtela-Kakkonen . . . . .* **1891**

In Vitro Metabolism of Montelukast by Cytochrome P450s and UDP-Glucuronosyltransferases. *Josiane de Oliveira Cardoso, Regina Vincenzi Oliveira, Jessica Bo Li Lu, and Zeruesenay Desta . . . . .* **1905**

Dose of Phenobarbital and Age of Treatment at Early Life are Two Key Factors for the Persistent Induction of Cytochrome P450 Enzymes in Adult Mouse Liver. *Yun-Chen Tien, Ke Liu, Chad Pope, Pengcheng Wang, Xiaochao Ma, and Xiao-bo Zhong . . . . .* **1938**

Continued on next page

Contents (cont'd.)

Penetration of Treosulfan and its Active Monoepoxide Transformation Product into Central Nervous System of Juvenile and Young Adult Rats. *Michał Romański, Joachim Baumgart, Sonja Böhm, and Franciszek K. Główka*. . . . . **1946**

*Boily, Nathalie Chauret, Julie Laterreur, François A. Leblond, Chantal Boudreau, Marie-Claude Duquet, Jean-François Lévesque, Line Ste-Marie, and Vincent Pichette* . . . . . **1960**

**ERRATUM**

In Vitro and In Vivo Mechanistic Studies toward Understanding the Role of 1-Aminobenzotriazole in Rat Drug-Drug Interactions. *Marc-Olivier*

Correction to “Metabolite Profiling of Bendamustine in Urine of Cancer Patients after Administration of [<sup>14</sup>C]Bendamustine”. . . . . **1955**

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

*About the cover:* The contour maps with compounds 20 and 6. See the article by Salminen et al. ([dx.doi.org/10.1124/dmd.115.065755](https://doi.org/10.1124/dmd.115.065755)).