

The Journal of PHARMACOLOGY

And Experimental Therapeutics

A Publication of the American Society for Pharmacology and Experimental Therapeutics

March 2009

Vol. 328, No. 3

Contents

HIGHLIGHTED PAPER	681
BEHAVIORAL PHARMACOLOGY	
Discriminative Stimulus Effects of 1-(2,5-Dimethoxy-4-Methylphenyl)-2-Aminopropane in Rhesus Monkeys: Antagonism and Apparent pA_2 Analyses <i>Jun-Xu Li, Kenner C. Rice, and Charles P. France</i>	976
Discriminative Stimulus and Subject-Rated Effects of Methamphetamine, <i>d</i> -Amphetamine, Methylphenidate, and Triazolam in Methamphetamine-Trained Humans <i>Rajkumar J. Sevak, William W. Stoops, Lon R. Hays, and Craig R. Rush</i>	1007
CARDIOVASCULAR	
INO-4885 [5,10,15,20-Tetra[<i>N</i> -(benzyl-4'-carboxylate)-2-pyridinium]-21 <i>H</i> ,23 <i>H</i> -porphine Iron(III) Chloride], a Peroxynitrite Decomposition Catalyst, Protects the Heart against Reperfusion Injury in Mice <i>Xiang-Ying Jiao, Erhe Gao, Yuexin Yuan, Yajing Wang, Wayne Bond Lau, Walter Koch, Xin-Liang Ma, and Ling Tao</i>	777
Angiotensin-(1-7) with Thioether Bridge: An Angiotensin-Converting Enzyme-Resistant, Potent Angiotensin-(1-7) Analog <i>Leon D. Kluskens, S. Adriaan Nelemans, Rick Rink, Louwe de Vries, Anita Meter-Arkema, Yong Wang, Thomas Walther, Anneke Kuipers, Gert N. Moll, and Marijke Haas</i>	849
The Impact of α_1 -Adrenoceptors Up-Regulation Accompanied by the Impairment of β -Adrenergic Vasodilatation in Hypertension <i>Eduardo Oliver, Daniel Martí, Fermí Montó, Nicla Flacco, Lucrecia Moreno, Domingo Barettino, M. Dolores Ivorra, and Pilar D'Ocon</i>	982
Late, but Not Early, Inhibition of Soluble Guanylate Cyclase Decreases Mortality in a Rat Sepsis Model <i>Daniel Fernandes, Regina Sordi, Leticia Kramer Pacheco, Geisson Marcos Nardi, Bettina Tomio Heckert, Christina Gaspar Villela, Amanda Revoredo Lobo, Christina Barja-Fidalgo, and Jamil Assreuy</i>	991
CELLULAR AND MOLECULAR	
Characterization of Serotonin Receptors in Pregnant Human Myometrium <i>Yolande Cordeaux, Dharmindra Pasupathy, Joanne Bacon, D. Stephen Charnock-Jones, and Gordon C. S. Smith</i>	682
Preclinical Efficacy and Safety of 1-Deoxygalactonojirimycin in Mice for Fabry Disease <i>Satoshi Ishii, Hui-Hwa Chang, Hidekatsu Yoshioka, Tatsuo Shimada, Kazuaki Mannen, Yasunori Higuchi, Atsumi Taguchi, and Jian-Qiang Fan</i>	723
Cathepsins B and L Differentially Regulate Amyloid Precursor Protein Processing <i>Donna M. Klein, Kevin M. Felsenstein, and Douglas E. Brenneman</i>	813

The Journal of Pharmacology and Experimental Therapeutics (ISSN 0022-3565) is published monthly by the American Society for Pharmacology and Experimental Therapeutics, 9650 Rockville Pike, Bethesda, MD 20814-3995; email: subscriptions@aspet.org; web site: aspet.org. Periodicals postage paid at Bethesda, MD, and at additional mailing offices. POSTMASTER: Send address changes to *The Journal of Pharmacology and Experimental Therapeutics*, 9650 Rockville Pike, Bethesda, MD 20814-3995. Subscription rates: U.S.: \$947; outside the U.S.: \$1,112. Single copy: \$82. GST Tax Number for Canadian subscribers: BN:

13489 2330 RT. Indexed or abstracted by *Biochemistry & Biophysics Citation Index*®, *Biological Abstracts*, *BIOSIS Previews Database*, *BioSciences Information Services*, *Current Awareness in Biological Sciences*, *Current Contents*®/*Life Sciences*, *EMBASE/Excerpta Medica*, *Index Medicus*, *Medical Documentation Service*®, *PsycINFO*, *Reference Update*®, *Research Alerts*®, *Science Citation Index*®, *SciSearch*®, and *SIIC Data Bases*. Copyright © 2009 by the American Society for Pharmacology and Experimental Therapeutics. All rights reserved. Printed in the U.S.A.

CHEMOTHERAPY, ANTIBIOTICS, AND GENE THERAPY

- Microtubule Binding and Disruption and Induction of Premature Senescence by Disorazole C₁ 715
Marni Brisson Tierno, Carolyn A. Kitchens, Bethany Petrik, Thomas H. Graham, Peter Wipf, Fengfeng L. Xu, William S. Saunders, Brianna S. Raccor, Raghavan Balachandran, Billy W. Day, Jane R. Stout, Claire E. Walczak, Alexander P. Ducruet, Celeste E. Reese, and John S. Lazo
- The Chemotherapeutic Agents XK469 (2-{4-[(7-Chloro-2-quinoxalinyloxy)phenoxy]propionic acid) and SH80 (2-{4-[(7-Bromo-2-quinolinyloxy)phenoxy]propionic acid) Inhibit Cytokinesis and Promote Polyploidy and Induce Senescence 796
John J. Reiners, Jr., Miriam Kleinman, Aby Joiakim, and Patricia A. Mathieu
- Involvement of Extracellular Signal-Regulated Kinase Activation in Human Osteosarcoma Cell Resistance to the Histone Deacetylase Inhibitor FK228 [(1S,4S,7Z,10S,16E,21R)-7-ethylidene-4,21-bis(propan-2-yl)-2-oxa-12,13-dithia-5,8,20,23-tetraazabicyclo[8.7.6]tricos-16-ene-3,6,9,19,22-pentone] 839
Hiroshi Matsubara, Motonobu Watanabe, Tsuyoshi Imai, Yoshihiro Yui, Yasuhiro Mizushima, Yoshimi Hiraumi, Yuri Kamitsuji, Ken-ichiro Watanabe, Koichi Nishijo, Junya Toguchida, Tatsutoshi Nakahata, and Souichi Adachi
- Double-Stranded RNA-Dependent Protein Kinase-Dependent Apoptosis Induction by a Novel Small Compound 866
Wenxian Hu, Wayne Hofstetter, Xiaoli Wei, Wei Guo, Yanbin Zhou, Abujiang Pataer, Hong Li, Bingliang Fang, and Stephen G. Swisher

ENDOCRINE AND DIABETES

- Glucose-Dependent Enhancement of Diabetic Bladder Contraction Is Associated with a Rho Kinase-Regulated Protein Kinase C Pathway 940
Koji Nobe, Taigi Yamazaki, Naoki Tsumita, Terumasa Hashimoto, and Kazuo Honda
- Inhaled Insulin Is Associated with Prolonged Enhancement of Glucose Disposal in Muscle and Liver in the Canine 970
Dale S. Edgerton, Alan D. Cherrington, Doss W. Neal, Melanie Scott, Margaret Lautz, Nancy Brown, Jeff Petro, Charles H. Hobbs, Chet Leach, Angelo Del Parigi, and Thomas R. Strack

GASTROINTESTINAL, HEPATIC, PULMONARY, AND RENAL

- Cannabidiol Attenuates Cisplatin-Induced Nephrotoxicity by Decreasing Oxidative/Nitrosative Stress, Inflammation, and Cell Death 708
Hao Pan, Partha Mukhopadhyay, Mohanraj Rajesh, Vivek Patel, Bani Mukhopadhyay, Bin Gao, György Haskó, and Pál Pacher
- Neutralizing Anti-Vascular Endothelial Growth Factor (VEGF) Antibody Reduces Severity of Experimental Ulcerative Colitis in Rats: Direct Evidence for the Pathogenic Role of VEGF 749
Ganna Tolstanova, Tetyana Khomenko, Xiaoming Deng, Longchuan Chen, Andrzej Tarnawski, Amrita Ahluwalia, Sandor Szabo, and Zsuzsanna Sandor
- Improved Antitumor and Anticancer Properties of a *trans*-Resveratrol Analog in Mice 829
Prasun Guha, Anindya Dey, Biswanath Sarkar, Manish V. Dhyani, Subrata Chattopadhyay, and Sandip K. Bandyopadhyay
- Identification and Quantification of 2',3'-cAMP Release by the Kidney 855
Jin Ren, Zaichuan Mi, Nicolas A. Stewart, and Edwin K. Jackson
- Comparison of Receptor Binding Characteristics of Commonly Used Muscarinic Antagonists in Human Bladder Detrusor and Mucosa 893
Kylie J. Mansfield, Jonathan J. Chandran, Kenneth J. Vaux, Richard J. Millard, Arthur Christopoulos, Frederick J. Mitchelson, and Elizabeth Burcher

INFLAMMATION, IMMUNOPHARMACOLOGY, AND ASTHMA

- Aerosolized Phosphoinositide 3-Kinase γ/δ Inhibitor TG100-115 [3-[2,4-Diamino-6-(3-hydroxyphenyl)pteridin-7-yl]phenol] as a Therapeutic Candidate for Asthma and Chronic Obstructive Pulmonary Disease 758
John Doukas, Lisa Eide, Karin Stebbins, Adrienne Racanelli-Layton, Luis Dellamary, Michael Martin, Elena Dneprovskaia, Glenn Noronha, Richard Soll, Wolfgang Wrasidlo, Lisette M. Acevedo, and David A. Cheresch
- Accumulation of Fingolimod (FTY720) in Lymphoid Tissues Contributes to Prolonged Efficacy 963
Sven-Christian Sensken, Constantin Bode, and Markus H. Gräler

METABOLISM, TRANSPORT, AND PHARMACOGENOMICS

- Identification and Characterization of Proximal Promoter Polymorphisms in the Human Concentrative Nucleoside Transporter 2 (*SLC28A2*) 699
Sook Wah Yee, James E. Shima, Stephanie Hesselson, Loan Nguyen, Sarah De Val, Rachel J. LaFond, Michiko Kawamoto, Susan J. Johns, Doug Stryke, Pui-Yan Kwok, Thomas E. Ferrin, Brian L. Black, David Gurwitz, Nadav Ahituv, and Kathleen M. Giacomini
- Kinetics of Cellular Retention during Caco-2 Permeation Experiments: Role of Lysosomal Sequestration and Impact on Permeability Estimates 882
Aki T. Heikkinen, Jukka Mönkkönen, and Timo Korjamo

NEUROPHARMACOLOGY

- Ethanol Withdrawal Provokes Opening of the Mitochondrial Membrane Permeability Transition Pore in an Estrogen-Preventable Manner 692
Marianna E. Jung, Andrew M. Wilson, Xiaohua Ju, Yi Wen, Daniel B. Metzger, and James W. Simpkins
- Old and New Pharmacology: Positive Allosteric Modulation of the $\alpha 7$ Nicotinic Acetylcholine Receptor by the 5-Hydroxytryptamine_{2B/C} Receptor Antagonist SB-206553 (3,5-Dihydro-5-methyl-N-3-pyridinylbenzo[1,2-b:4,5-b']di-pyrrole-1(2H)-carboxamide) 766
John Dunlop, Tim Lock, Brian Jow, Fabrizio Sitzia, Steven Grauer, Flora Jow, Angela Kramer, Mark R. Bowlby, Andrew Randall, Dianne Kowal, Adam Gilbert, Thomas A. Comery, James LaRocque, Veronica Soloveva, Jon Brown, and Renza Roncarati
- Inhibition of Phosphodiesterase 10A Increases the Responsiveness of Striatal Projection Neurons to Cortical Stimulation 785
Sarah Threlfell, Stephen Sammut, Frank S. Menniti, Christopher J. Schmidt, and Anthony R. West
- Cocaine Alters Vesicular Dopamine Sequestration and Potassium-Stimulated Dopamine Release: The Role of D2 Receptor Activation 807
Sarah J. Farnsworth, Trent J. Volz, Glen R. Hanson, and Annette E. Fleckenstein
- Cannabinoid Agonists Stimulate [³H]GABA Release in the Globus Pallidus of the Rat When G_i Protein-Receptor Coupling Is Restricted: Role of Dopamine D2 Receptors 822
Brenda Gonzalez, Francisco Paz, Leonor Florán, Jorge Aceves, David Erij, and Benjamín Florán
- The Effect of a Chimeric Human/Murine Anti-Cocaine Monoclonal Antibody on Cocaine Self-Administration in Rats 873
Andrew B. Norman, Mantana K. Norman, William R. Buesing, Michael R. Tabet, Vladimir L. Tsibulsky, and William J. Ball
- The Novel Neuropeptide Y Y₅ Receptor Antagonist Lu AA33810 [*N*-[[*trans*-4-[(4,5-Dihydro[1]benzothiepieno[5,4-*d*]thiazol-2-yl)amino]cyclohexyl]methyl]-methanesulfonamide] Exerts Anxiolytic- and Antidepressant-Like Effects in Rat Models of Stress Sensitivity 900
Mary W. Walker, Toni D. Wolinsky, Vrej Jubian, Gamini Chandrasena, Huailing Zhong, Xinyan Huang, Silke Miller, Laxminarayan G. Hegde, Douglas A. Marsteller, Mohammad R. Marzabadi, Mariusz Papp, David H. Overstreet, Christophe P. G. Gerald, and Douglas A. Craig
- Protein Kinase C β Is a Critical Regulator of Dopamine Transporter Trafficking and Regulates the Behavioral Response to Amphetamine in Mice 912
Rong Chen, Cheryse A. Furman, Minjia Zhang, Myung N. Kim, Robert W. Gereau IV, Michael Leitges, and Margaret E. Gnegy
- The Behavioral and Neurochemical Effects of a Novel D-Amino Acid Oxidase Inhibitor Compound 8 [*4H*-Thieno[3,2-*b*]pyrrole-5-carboxylic Acid] and D-Serine 921
Sean M. Smith, Jason M. Uslaner, Lihang Yao, Chadwick M. Mullins, Nathan O. Surles, Sarah L. Huszar, Caitlyn H. McNaughton, Danette M. Pascarella, Monika Kandebo, Richard M. Hinchliffe, Tim Sparey, Nicholas J. Brandon, Brian Jones, Shankar Venkatraman, Mary Beth Young, Nancy Sachs, Marlene A. Jacobson, and Peter H. Hutson
- Nicotinic Receptor Activation Increases [³H]Dopamine Uptake and Cell Surface Expression of Dopamine Transporters in Rat Prefrontal Cortex 931
Jun Zhu, Subbu Apparsundaram, and Linda P. Dwoskin
- Antipsychotic-Like Effect of Retigabine [*N*-(2-Amino-4-(fluorobenzylamino)-phenyl)carbamic Acid Ester], a KCNQ Potassium Channel Opener, via Modulation of Mesolimbic Dopaminergic Neurotransmission 951
Florence Sotty, Trine Damgaard, Liliana P. Montezinho, Arne Mørk, Christina K. Olsen, Christoffer Bundgaard, and Henriette Husum
- The Modulation of Synaptic GABA_A Receptors in the Thalamus by Eszopiclone and Zolpidem 1000
Fan Jia, Peter A. Goldstein, and Neil L. Harrison

TOXICOLOGY

A Role for Mitochondrial Oxidative Stress in Sulfur Mustard Analog 2-Chloroethyl Ethyl Sulfide-Induced Lung Cell Injury and Antioxidant Protection 732


Neal S. Gould, Carl W. White, and Brian J. Day

Cardiac-Targeted Expression of Soluble Fas Attenuates Doxorubicin-Induced Cardiotoxicity in Mice 740

Jianli Niu, Asim Azfer, Kangkai Wang, Xihai Wang, and Pappachan E. Kolattukudy

ERRATUM

Correction to “Radiodefluorination of 3-Fluoro-5-(2-(2-[18F](fluoromethyl)-thiazol-4-yl)ethynyl)benzotrile ([18F]SP203), a Radioligand for Imaging Brain Metabotropic Glutamate Subtype-5 Receptors with Positron Emission Tomography, Occurs by Glutathionylation in Rat Brain” 1019

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

About the cover: Disorazole c_1 disrupts microtubules at interphase and metaphase. See the article by Tierno et al. on page 715 of this issue.