

## Contents

## ANALGESIA AND DRUGS OF ABUSE

- |                                                                                                                                                                |                                                                                                                           |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|-----|
| Nitric Oxide Mediation of Cocaine-Induced Dopaminergic Behaviors: Ambulation-Accelerating Activity, Reverse Tolerance and Conditioned Place Preference in Mice | Hack-Seang Kim and Woo-Kyu Park                                                                                           | 551 |
| Antinociceptive Effects of R(-)- and S(+)-Flurbiprofen on Rat Spinal Dorsal Horn Neurons Rendered Hyperexcitable by an Acute Knee Joint Inflammation           | Volker Neugebauer, Gerd Geisslinger, Petra Rumenapp, Frank Weiretter, Istvan Szelenyi, Kay Brune and Hans-Georg Schaible | 618 |
| Effects of Intrathecal and Intracerebroventricular Buprenorphine on a C-Fiber Reflex in the Rat                                                                | Frederic Guirimand, Marcel Chauvin, Jean-Claude Willer and Daniel Le Bars                                                 | 629 |

## AUTONOMIC PHARMACOLOGY

- |                                                                                                                                                                       |                                                                           |      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|------|
| Allosteric Interactions at L-type Calcium Channels Between FPL 64176 and the Enantiomers of the Dihydropyridine Bay K 8644                                            | M. M. Usowicz, M. Gigg, L. M. E. Jones, C. W. Cheung and S. A. Hartley    | 638  |
| Characterization of $\alpha_2$ Adrenoceptors and Other Adrenoceptors in Membranes Isolated from Dog Mesenteric Nerve Axons                                            | Edwin E. Daniel, Viera Gaspar, Irene Berezin and Chiu-Yin Kwan            | 978  |
| Quantification of Steady State Expression of mRNA for $\alpha_1$ Adrenergic Receptor Subtypes Using Reverse Transcription and a Competitive Polymerase Chain Reaction | Margaret A. Scofield, Fengming Liu, Peter W. Abel and William B. Jeffries | 1035 |

## BEHAVIORAL PHARMACOLOGY

- |                                                                                                                                                                                                                                         |                                                                                                           |      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|------|
| Sensitization to the Behavioral Effect of Kainic Acid in the Mouse Is Mediated by Nitric Oxide                                                                                                                                          | Alice A. Larson and Kelley F. Kitto                                                                       | 544  |
| Effects of (-)-S-2,8-Dimethyl-3-Methylene-1-Oxa-8-Azaspiro[4,5]Decane L-Tartrate Monohydrate (YM796), a Novel Muscarinic Agonist, on Disturbance of Passive Avoidance Learning Behavior in Drug-Treated and Senescence-Accelerated Mice | Masanori Suzuki, Takashi Yamaguchi, Yukiko Ozawa, Mitsuko Ohyama and Minoru Yamamoto                      | 728  |
| U-90042, A Sedative/Hypnotic Compound that Interacts Differentially with the GABA <sub>A</sub> Receptor Subtypes                                                                                                                        | Andrew H. Tang, Martin W. Smith, Donald B. Carter, Wha Bin Im and Philip F. Vonvoigtlander                | 761  |
| Critical Role for Glucocorticoid Receptors in Stress- and Ethanol-Induced Locomotor Sensitization                                                                                                                                       | Amanda J. Roberts, Christina N. Lessov and Tamara J. Phillips                                             | 790  |
| A Drug Discrimination Analysis of the Actions of Novel Serotonin <sub>1A</sub> Receptor Ligands in the Rat Using the 5-HT <sub>1A</sub> Receptor Agonist, 8-Hydroxy-2-(di-n-propylamino)tetralin                                        | Rudy Schreiber, Mauricette Brocco, Brigitte Lefebvre de Ladonchamps, Sabine Monneyron and Mark J. Millan | 822  |
| Amphetamine Produces Sensitized Increases in Locomotion and Extracellular Dopamine Preferentially in the Nucleus Accumbens Shell of Rats Administered Repeated Cocaine                                                                  | R. Christopher Pierce and Peter W. Kalivas                                                                | 1019 |
| Neurochemical and Behavioral Evidence that Quipazine-Ketanserin Discrimination is Mediated by Serotonin <sub>2A</sub> Receptor                                                                                                          | Randy L. Smith, Robert J. Barrett and Elaine Sanders-Bush                                                 | 1050 |

## CARDIOVASCULAR PHARMACOLOGY

- |                                                                                                                           |                                                                                                 |     |
|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-----|
| HP-228, A Novel Synthetic Peptide, Inhibits the Induction of Nitric Oxide Synthase <i>In Vivo</i> But Not <i>In Vitro</i> | G. Abou-Mohamed, A. Papapetropoulos, D. Ulrich, J. D. Catravas, R. R. Tuttle and R. W. Caldwell | 584 |
| Cardiovascular Responses to Cigarette Smoke Exposure in Restrained Conscious Rats                                         | Abdulghani A. Houdi, Russell T. Dowell and John N. Diana                                        | 646 |

<b>Coronary and Hemodynamic Effects of S 16257, a New Bradycardic Agent, in Resting and Exercising Conscious Dogs</b>	Lionel Simon, Bijan Ghaleh, Louis Puybasset, Jean-François Giudicelli and Alain Berdeaux	659
<b>Cardiovascular Effects of the Novel Dual Inhibitor of Neutral Endopeptidase and Angiotensin-Converting Enzyme BMS-182657 in Experimental Hypertension and Heart Failure</b>	Nick C. Trippodo, Jeffrey A. Robl, Magdi M. Asaad, J. Eileen Bird, Balkrushna C. Panchal, Thomas R. Schaeffer, Maxine Fox, Mary R. Giancarli and Hong Son Cheung	745
<b>Increased Function of Voltage-Dependent Ca<sup>++</sup> Channels and Ca<sup>++</sup>-Activated K<sup>+</sup> Channels in Resting State of Femoral Arteries from Spontaneously Hypertensive Rats at Prehypertensive Stage</b>	Masahisa Asano, Yukiko Nomura, Katsuaki Ito, Yoshiaki Uyama, Yuji Imaizumi and Minoru Watanabe	775
<b>Effects of Photodegradation Products of Nifedipine: The Nitroso-derivative Relaxes Contractions of the Rat Aortic Strip Induced by Norepinephrine and Other Agonists</b>	Nobumasa Hayase, Shun-Ichi Inagaki and Yasushi Abiko	813
<b>Plasma Digoxin Immunoreactivity and Arterial Potassium Relaxation after Quinapril Therapy in Hypertensive Rats</b>	Mika Kähönen, Peter A. Doris, Heikki Mäkynen and Ilkka Pörsti	832
<b>Moexipril, a New Angiotensin-Converting Enzyme (ACE) Inhibitor: Pharmacological Characterization and Comparison with Enalapril</b>	Oliver Edling, Gang Bao, Martin Feelisch, Thomas Unger and Peter Gohlke	854
<b>Telemetry Monitoring of Hemodynamic Effects Induced Over Time by Adenosine Agonists in Spontaneously Hypertensive Rats</b>	C. Casati, A. Monopoli, A. Forlani, E. Bonizzoni and E. Ongini	914
<b>Toxicodynamic Analysis of Cough and Inflammatory Reactions by Angiotensin-Converting Enzyme Inhibitors in Guinea Pig</b>	Kaori Ito, Kiyomi Ito, Yasufumi Sawada, Junzo Kamei, Miwa Misawa and Tatsuji Iga	920
<b>Pretreatment with a Blocking Monoclonal Antibody to P-selectin Accelerates Pharmacological Thrombolysis in a Primate Model of Arterial Thrombosis</b>	Christopher F. Toombs, Garry L. DeGraaf, Joseph P. Martin, Jian G. Geng, Donald C. Anderson and Ronald J. Shebuski	941
<b>Anti-Dopamine <math>\beta</math>-Hydroxylase Immunotoxin-Induced Sympathectomy in Adult Rats</b>	Matthew J. Picklo, Ronald G. Wiley, Suzanna Lonce, Douglas A. Lappi and David Robertson	1003
<b>CELLULAR AND MOLECULAR PHARMACOLOGY</b>		
<b>Serotonin Stimulates Rapid Increase of Inositol 1,4,5-Trisphosphate in Ovine Uterine Artery: Correlation with Contractile State</b>	Lubo Zhang and Xiang-Qun Hu	576
<b>Pinacidil Relaxes Porcine and Human Coronary Arteries by Activating ATP-Dependent Potassium Channels in Smooth Muscle Cells</b>	Maik Gollasch, Rostislav Bychkov, Christian Ried, Friederike Behrendt, Susan Scholze, Friedrich C. Luft and Hermann Haller	681
<b>KR-30450, a Newly Synthesized Benzopyran Derivative, Activates the Cardiac ATP-Sensitive K<sup>+</sup> Channel</b>	Yong-Geun Kwak, Seok-Ki Park, Hyung-Sub Kang, Jin-Sang Kim, Soo-Wan Chae, Kyu-Park Cho, Sung-Eun Yoo and Donghee Kim	807
<b>Closed- and Open-State Binding of 4-Aminopyridine to the Cloned Human Potassium Channel Kv1.5</b>	Ron Bouchard and David Fedida	864
<b>DRUG METABOLISM AND DISPOSITION</b>		
<b>Variability in Human Cytochrome P450 Paclitaxel Metabolism</b>	Daryl S. Sonnichsen, Qing Liu, Erin G. Schuetz, John D. Schuetz, Alberto Pappo and Mary V. Relling	566
<b>N-Demethylation of Amitriptyline <i>In Vitro</i>: Role of Cytochrome P-450 3A (CYP3A) Isoforms and Effect of Metabolic Inhibitors</b>	Jürgen Schmider, David J. Greenblatt, Lisa L. von Moltke, Jerold S. Harmatz and Richard I. Shader	592
<b>Factors Affecting Serum Protein Binding of Cocaine in Humans</b>	Robert B. Parker, Cheri L. Williams, S. Casey Laizure and John J. Lima	605
<b>Depletion of Hepatic 3'-Phosphoadenosine 5'-Phosphosulfate (PAPS) and Sulfate in Rats by Xenobiotics That are Sulfated</b>	Hyo J. Kim, Joon H. Cho and Curtis D. Klaassen	654

<b>Effect of Oleanolic Acid on Hepatic Toxicant-Activating and Detoxifying Systems in Mice</b>	Jie Liu, Yaping Liu, Andrew Parkinson and Curtis D. Klaassen	768
<b>Membrane Permeability and Lipophilicity in the Isolated Perfused Rat Liver: 5-Ethyl Barbituric Acid and Other Compounds</b>	Chen-Hsi Chou, Andrew J. McLachlan and Malcolm Rowland	933
<b>Tissue Distribution of Cocaine Methyl Esterase and Ethyl Transferase Activities: Correlation with Carboxylesterase Protein</b>	Robert A. Dean, Jing Zhang, Monica R. Brzezinski and William F. Bosron	965
<b>Age- and Sex-Related Alterations of Microsomal Drug- and Testosterone-Oxidizing Cytochrome P450 in Sprague-Dawley Strain-Derived Dwarf Rats</b>	Miki Shimada, Norie Murayama, Yasushi Yamazoe, Hisashi Hashimoto, Hiroshi Ishikawa and Ryuichi Kato	972
<b>Interindividual Variation in Expression of P-Glycoprotein in Normal Human Liver and Secondary Hepatic Neoplasms</b>	Erin G. Schuetz, Katryn N. Furuya and John D. Schuetz	1011
<b>GASTROINTESTINAL PHARMACOLOGY</b>		
<b>Effects of a Selective DP Receptor Agonist (BW 245C) and Antagonist (BW A868C) on the Canine Colonic Epithelium: An Argument for a Different DP Receptor?</b>	P. K. Rangachari, P.-A. Betti, E. T. Prior and L. J. Roberts II	611
<b>Different Effects of Indomethacin and Nabumetone on Prostaglandin-Mediated Gastric Responses to Central Vagal Activation in Rats</b>	Sylvain Cardin, Andrew H. Soll and Yvette Taché	667
<b>Mechanisms of Absorption Enhancement by Medium Chain Fatty Acids in Intestinal Epithelial Caco-2 Cell Monolayers</b>	Tuulikki Lindmark, Tapio Nikkilä and Per Artursson	958
<b>Cyclopiazonic Acid, Inhibiting the Endoplasmic Reticulum Calcium Pump, Reduces the Canine Colonic Pacemaker Frequency</b>	Louis W. C. Liu, Lars Thuneberg and Jan D. Huizinga	1058
<b>IMMUNOPHARMACOLOGY</b>		
<b>Effects of Putative Cannabinoid Receptor Ligands, Anandamide and 2-Arachidonyl-Glycerol, on Immune Function in B6C3F1 Mouse Splenocytes</b>	Michael Lee, Kyu Hwan Yang and Norbert E. Kaminski	529
<b>Disposition Characteristics of Recombinant Human Interleukin-11 after a Bolus Intravenous Administration in Mice</b>	Akira Takagi, Hideo Masuda, Yoshinobu Takakura and Mitsuru Hashida	537
<b>Effects of Methylprednisolone and 21-Aminosteroids on Mitogen-induced Interleukin-6 and Tumor Necrosis Factor-<math>\alpha</math> Production in Human Peripheral Blood Mononuclear Cells</b>	Frank Buttgerit, Ingo Brink, Bernhard Thiele, Gerd-Rüdiger Burmester, Falk Hiepe and Edward D. Hall	850
<b>Mechanisms of Ethanol-Induced Suppression of a Primary Antibody Response in a Mouse Model for Binge Drinking</b>	Yun-Cheng Han and Stephen B. Pruett	950
<b>The Immunosuppressant Leflunomide Inhibits Lymphocyte Proliferation by Inhibiting Pyrimidine Biosynthesis</b>	Holly M. Cherwinski, Ronald G. Cohn, Paul Cheung, Donna J. Webster, Yi-Zheng Xu, John P. Caulfield, John M. Young, Gayle Nakano and John T. Ransom	1043
<b>NEUROPHARMACOLOGY</b>		
<b>Pharmacological Characterization of GT-2016, a Non-Thiourea-Containing Histamine H<sub>3</sub> Receptor Antagonist: <i>In Vitro</i> and <i>In Vivo</i> Studies</b>	Clark E. Tedford, Stephen L. Yates, Gary P. Pawlowski, Julia W. Nalwalk, Lindsay B. Hough, M. Amin Khan, James G. Phillips, Graham J. Durant and Robert C. A. Frederickson	598
<b>Role of Second Messengers in Agonist Up-Regulation of 5-HT<sub>2A</sub> (5-HT<sub>2</sub>) Receptor Binding Sites in Cerebellar Granule Neurons: Involvement of Calcium Influx and a Calmodulin-Dependent Pathway</b>	Hong Chen, He Li and De-Maw Chuang	674
<b>Anticonvulsant Tolerance and Withdrawal Characteristics of Benzodiazepine Receptor Ligands in Different Seizure Models in Mice. Comparison of Diazepam, Bretazenil and Abecarnil</b>	Chris Rundfeldt, Piotr Wlaź, Dagmar Hönack and Wolfgang Löscher	693

<b>Galanin Receptors in Human Basal Forebrain Differ from Receptors in the Hypothalamus: Characterization Using [<sup>125</sup>I]Galanin (Porcine) and [<sup>125</sup>I]Galantide</b>	D. C. Deecher, O. O. Odusan and E. J. Mufson	720
<b>Pharmacological Characterization of LY303870: A Novel, Potent and Selective Nonpeptide Substance P (Neurokinin-1) Receptor Antagonist</b>	Bruce D. Gitter, Robert F. Bruns, J. Jeffrey Howbert, Diane C. Waters, Penny G. Threlkeld, Laura M. Cox, James A. Nixon, Karen L. Lobb, Norman R. Mason, Peter W. Stengel, Sandra L. Cockerham, Steven A. Silbaugh, Donald R. Gehlert, Douglas A. Schober, Smriti Iyengar, David O. Calligaro, Domenico Regoli and Philip A. Hipkind	737
<b>NMDA Antagonist Properties of the Putative Antiaddictive Drug, Ibogaine</b>	Piotr Popik, Richard T. Layer, Linda H. Fossom, Morris Benveniste, Beth Geter-Douglass, Jeffrey M. Witkin and Phil Skolnick	753
<b>Chronic Neurosteroid Treatment Decreases the Efficacy of Benzodiazepine Ligands and Neurosteroids at the <math>\gamma</math>-Aminobutyric Acid<sub>A</sub> Receptor Complex in Mammalian Cortical Neurons</b>	Rong Yu and Maharaj K. Ticku	784
<b>Muscarine Induces an Anomalous Inhibition of Synaptic Transmission in Rat Auditory Thalamic Neurons <i>In Vitro</i></b>	David M. Mooney, Bin Hu and Vladimir V. Senatorov	838
<b>(+)-N-Allylnormetazocine Enhances N-Acetyltransferase Activity and Melatonin Synthesis: Preliminary Evidence for a Functional Role of <i>Sigma</i> Receptors in the Rat Pineal Gland</b>	L. Steardo, P. Monteleone, M. d'Istria, I. Serino, M. Maj and V. Cuomo	845
<b>Regulation of Striatal Cyclic-3',5'-Adenosine Monophosphate Accumulation and GABA Release by Glutamate Metabotropic and Dopamine D<sub>1</sub> Receptors</b>	Jia Wang and Kenneth M. Johnson	877
<b>Functional Correlates of Dopamine D<sub>3</sub> Receptor Activation in the Rat <i>In Vivo</i> and Their Modulation by the Selective Antagonist, (+)-S 14297: I. Activation of Postsynaptic D<sub>3</sub> Receptors Mediates Hypothermia, Whereas Blockade of D<sub>2</sub> Receptors Elicits Prolactin Secretion and Catalepsy</b>	Mark J. Millan, Jean-Louis Peglion, Joël Vian, Jean-Michel Rivet, Mauricette Brocco, Alain Gobert, Adrian Newman-Tancredi, Catherine Dacquet, Karin Bervoets, Sylvie Girardon, Valérie Jacques, Christine Chaput and Valérie Audinot	885
<b>Functional Correlates of Dopamine D<sub>3</sub> Receptor Activation in the Rat <i>In Vivo</i> and Their Modulation by the Selective Antagonist, (+)-S 14297: II. Both D<sub>2</sub> and "Silent" D<sub>3</sub> Autoreceptors Control Synthesis and Release in Mesolimbic, Mesocortical and Nigrostriatal Pathways</b>	Alain Gobert, Jean-Michel Rivet, Valérie Audinot, Laetitia Cistarelli, M. Spedding, Joël Vian, Jean-Louis Peglion and Mark J. Millan	899
<b>Mechanisms of Up-regulation of Neuronal Nicotinic Acetylcholine Receptors in Clonal Cell Lines and Primary Cultures of Fetal Rat Brain</b>	Merouane Bencherif, Kathy Fowler, Ronald J. Lukas and Patrick M. Lippiello	987
<b>[<sup>3</sup>H]Epibatidine Labels Nicotinic Receptors in Rat Brain: An Autoradiographic Study</b>	David C. Perry and Kenneth J. Kellar	1030
<b>PROSTAGLANDINS, LEUKOTRIENES AND OTHER EICOSANOIDS</b>		
<b>Prostaglandin E<sub>2</sub> Contracts Vascular Smooth Muscle and Inhibits Potassium Currents in Vascular Smooth Muscle Cells of Rat Tail Artery</b>	Jun Ren, Edward Karpinski and Christina G. Benishin	710
<b>Anti-inflammatory Properties of Gö-6850: A Selective Inhibitor of Protein Kinase C</b>	Peer B. Jacobson, Susan L. Kuchera, Alan Metz, Christoph Schächtele, Kathleen Imre and Denis J. Schrier	995
<b>PULMONARY PHARMACOLOGY</b>		
<b>Inhibition of Lipopolysaccharide-Induced Pulmonary Edema by Isozyme-Selective Phosphodiesterase Inhibitors in Guinea Pigs</b>	Ralph E. Howell, Lorayne P. Jenkins and Debra E. Howell	703

<b>EUK-8, a Synthetic Superoxide Dismutase and Catalase Mimetic, Ameliorates Acute Lung Injury in Endotoxemic Swine</b>	Pamela K. Gonzalez, Jing Zhuang, Susan R. Doctrow, Bernard Malfroy, Patrick F. Benson, Michael J. Menconi and Mitchell P. Fink	798
<b>RENAL PHARMACOLOGY</b>		
<b>Supra-Additive Natriuretic Synergism between Bendroflumethiazide and Furosemide in Rats</b>	Thomas E. N. Jonassen, Lene Grønbeck, Michael Shalmi, Jørgen Sjøberg Petersen, Frederik Andreasen and Sten Christensen	558
<b>Peritubular Paraquat Transport in Isolated Renal Proximal Tubules</b>	Carlotta E. Groves, Mark N. Morales, A. J. Gandolfi, W. H. Dantzler and Stephen H. Wright	926
<b>TOXICOLOGY</b>		
<b>Reye Syndrome Model in Rats: Protection Against Liver Abnormalities by L-Carnitine and Acetyl-L-Carnitine</b>	Mario Visentin, Raffaele Bellasio and Maria Teresa Tacconi	1069