

Contents

ANALGESIA AND DRUGS OF ABUSE

- Tiapride Attenuates Pain Transmission Through an Indirect Activation of Central Serotonergic Mechanism** Nobuaki Takeshita, Yoshitaka Ohkubo and Isamu Yamaguchi 23
- Characterization of the Spinal Antinociceptive Activity of Constrained Peptidomimetic Opioids** Tony L. Yaksh, Annika B. Malmberg, Seonggu Ro, Peter Schiller and Murray Goodman 63
- Spinal Opioid Receptors and Adenosine Release: Neurochemical and Behavioral Characterization of Opioid Subtypes** Catherine M. Cahill, Thomas D. White and Jana Sawynok 84
- Felbamate Relieves Several Abnormal Pain Sensations in Rats with an Experimental Peripheral Neuropathy** Yoshiki Imamura and Gary J. Bennett 177
- Intrathecal Baclofen and Muscimol, But Not Midazolam, are Antinociceptive Using the Rat-Formalin Model** David M. Dirig and Tony L. Yaksh 219
- Opioid Modulation of Fetal Glucose Homeostasis: Role of Receptor Subtypes** Hazel H. Szeto, Yi Soong, Dun-li Wu and Peter Y. Cheng 334
- Microinfusion of *Mu* but Not *Delta* or *Kappa* Opioid Agonists into the Basolateral Amygdala Results in Inhibition of the Tail Flick Reflex in Pentobarbital-Anesthetized Rats** Fred J. Helmstetter, Patrick S. F. Bellgowan and Laura H. Poore 381
- Distribution of Morphine 6-Glucuronide and Morphine Across the Blood-Brain Barrier in Awake, Freely Moving Rats Investigated by *in Vivo* Microdialysis Sampling** Tor A. Aasmundstad, Jørg Mørland and Ragnhild E. Paulsen 435
- Distribution of the μ and δ Opioid Binding Sites in the Brain of the Alcohol-Preferring AA and Alcohol-Avoiding ANA Lines of Rats** Jean-Pascal de Waele, Kalervo Kiianmaa and Christina Gianoulakis 518

AUTONOMIC PHARMACOLOGY

- 5-Hydroxytryptamine-Induced Synovial Plasma Extravasation Is Mediated *via* 5-Hydroxytryptamine_{2A} Receptors on Sympathetic Efferent Terminals** Pamela A. Pierce, Guo-Xi Xie, Stephen J. Peroutka, Paul G. Green and Jon D. Levine 502

BEHAVIORAL PHARMACOLOGY

- Antagonism of the Discriminative Stimulus Effects of Δ^9 -Tetrahydrocannabinol in Rats and Rhesus Monkeys** Jenny L. Wiley, John A. Lowe, Robert L. Balster and Billy R. Martin 1
- Effects of Single and Multiple Intravenous Cocaine Injections in Humans Maintained on Methadone** Richard W. Foltin, Ingrid Christiansen, Frances R. Levin and Marian W. Fischman 38
- Noradrenergic Involvement in the Discriminative Stimulus Effects of Cocaine in Squirrel Monkeys** Roger D. Spearman 53
- Development of Behavioral Sensitization to Cocaine: Influence of *Kappa* Opioid Receptor Agonists** Christian A. Heidbreder, Dusica Babovic-Vuksanovic, Mohammed Shoab and Toni S. Shippenberg 150
- Schedule-Controlled Behavioral Effects of the Selective 2-Amino-3-(5-methyl-3-hydroxyisoxazol-4-yl)propanoic Acid Antagonist LY293558 in Pigeons** Mark J. Benvenha, Paul L. Ornstein and J. David Leander 164
- Drug Discrimination Analysis of Midazolam under a Three-Lever Procedure II: Differential Effects of Benzodiazepine Receptor Agonists** Christine A. Sannerud and Nancy A. Ator 183
- Cocaine Sensitization in Periadolescent and Adult Rats** Giovanni Laviola, Robin D. Wood, Cynthia Kuhn, Reynolds Francis and Linda P. Spear 345

Agonist and Antagonist Effects of Dynorphin A-(1-13) in a Thermal Antinociception Assay in Rhesus Monkeys	Eduardo R. Butelman, Charles P. France and James H. Woods	374
Comparison of Benzodiazepine Receptor Ligands with Partial Agonistic, Antagonistic or Partial Inverse Agonistic Properties in Precipitating Withdrawal in Squirrel Monkeys	J. R. Martin, F. Jenck and J.-L. Moreau	405
CARDIOVASCULAR PHARMACOLOGY		
Interactions between Hydroxocobalamin and Nitric Oxide (NO): Evidence for a Redox Reaction between NO and Reduced Cobalamin and Reversible NO Binding to Oxidized Cobalamin	Lori G. Rochelle, Salvatore J. Morana, Harriet Kruszyna, Michael A. Russell, Dean E. Wilcox and Roger P. Smith	48
Zatebradine, a Specific Bradycardic Agent, Alters the Hemodynamic and Left Ventricular Mechanical Actions of Levosimendan, a New Myofibrillar Calcium Sensitizer, in Conscious Dogs	Paul S. Pagel, Christopher P. Harkin, Douglas A. Hettrick and David C. Warltier	127
Pharmacological Characterization of the Selective Nonpeptide Neuropeptide Y Y1 Receptor Antagonist BIBP 3226	Henri N. Doods, Wolfgang Wienen, Michael Entzeroth, Klaus Rudolf, Wolfgang Eberlein, Wolfhard Engel and Heike A. Wieland	136
Subtype Selectivity and Antagonistic Profile of the Nonpeptide Y1 Receptor Antagonist BIBP 3226	Heike A. Wieland, Klaus D. Willim, Michael Entzeroth, Wolfgang Wienen, Klaus Rudolf, Wolfgang Eberlein, Wolfhard Engel and Henri N. Doods	143
Quantification of the <i>In Vivo</i> Potency of the Adenosine A₂ Receptor Antagonist 8-(3-Chlorostyryl)Caffeine	Ron A. A. Mathôt, Josy M. Gubbens-Stibbe, Willem Soudijn, Kenneth A. Jacobson, Adriaan P. IJzerman and Meindert Danhof	245
Changes in Sympathetic Neurotransmission and Adrenergic Control of Cardiac Contractility During 1,3-Dipropyl-8-Sulphophenylxanthine-Induced Hypertension	Annalisa Rubino and Geoffrey Burnstock	422
CELLULAR AND MOLECULAR PHARMACOLOGY		
Modulation by σ Ligands of Intracellular Free Ca⁺⁺ Mobilization by N-Methyl-D-aspartate in Primary Culture of Rat Frontal Cortical Neurons	Teruo Hayashi, Ariyuki Kagaya, Minoru Takebayashi, Masami Shimizu, Yosuke Uchitomi, Nobutaka Motohashi and Shigeto Yamawaki	207
The Endothelin Receptor Profile in L6 Myotubes	Zoltan Fekete, Xiao Yan Yang, Masayuki Kimura and Abraham Aviv	215
Acute Amiodarone Terminates Ventricular Fibrillation by Modifying Cellular Ca⁺⁺ Homeostasis in Isolated Perfused Rat Hearts	Shoji Kojima, Shao T. Wu, Joan Wikman-Coffelt and William W. Parmley	254
Actions of the Benzopyran Compound Terikalant on Macroscopic Currents in Rat Ventricular Myocytes	James G. McLarnon and Rending Xu	389
Prevention and Reduction of Neural Damage in Ischemic Strokes by ω-(N,N'-Diethylamino)-n-alkyl-3,4,5-Trimethoxybenzoate Compounds	George C. Y. Chiou and Show-Jen Hong	474
CHEMOTHERAPY/GENE THERAPY		
Cepharanthin, a Multidrug Resistant Modifier, is a Substrate for P-Glycoprotein	Midori Hirai, Kumiko Tanaka, Takako Shimizu, Yusuke Tanigawara, Masato Yasuhara, Ryohei Hori, Yoshiyuki Kakehi, Osamu Yoshida, Kazumitsu Ueda, Tohru Komano and Ken-Ichi Inui	73
Induction of Apoptosis in Murine and Human Neuroblastoma Cell Lines by the Enebyne Natural Product Neocarzinostatin	Theresa L. Hartsell, Jack C. Yalowich, Mary K. Ritke, A. J. Martinez and Nina Felice Schor	479
DRUG METABOLISM AND DISPOSITION		
Phenethyl Isothiocyanate, a New Dietary Liver Aldehyde Dehydrogenase Inhibitor	Kai O. Lindros, Thomas Badger, Martin Ronis, Magnus Ingelman-Sundberg and Martti Koivusalo	79

Hepatic Transport of Rose Bengal by Perfused Rabbit Liver: The Effect of Albumin Binding on the Unidirectional Rate Constants	B. A. Luxon and P. D. King	296
<i>In Vitro</i> Pharmacokinetics of Phosphorothioate Antisense Oligonucleotides	Rosanne M. Crooke, Mark J. Graham, Margaret E. Cooke and Stanley T. Crooke	462
ENDOCRINE PHARMACOLOGY		
Prophylaxis of Genetically Determined Diabetes by Diazoxide: A Study in a Rat Model of Naturally Occurring Obese Diabetes	Toru Aizawa, Nahoko Taguchi, Yoshihiko Sato, Tetsuo Nakabayashi, Hideko Kobuchi, Hiroya Hidaka, Takeshi Nagasawa, Fujiki Ishihara, Nobuo Itoh and Kiyoshi Hashizume	194
GASTROINTESTINAL PHARMACOLOGY		
Role of Na⁺ in the Asymmetric Paracellular Transport of 4-Phenylazobenzoyloxycarbonyl-L-Pro-L-Leu-Gly-L-Pro-D-Arg Across Rabbit Colonic Segments and Caco-2 Cell Monolayers	Wan-Ching Yen and Vincent H. L. Lee	114
Characterization of Endothelin Receptors Mediating Mechanical Responses to the Endothelins in the Isolated Stomach Strip of the Rat	Graham H. Allcock, Bruno Battistini, Alain Fournier, Timothy D. Warner and John R. Vane	120
Peptide Structural Requirements for Antagonism Differ between the Two Mammalian Bombesin Receptor Subtypes	Jaw-Town Lin, David H. Coy, Samuel A. Mantey and Robert T. Jensen	285
Arachidonic Acid Cascade and Stimulation of Acetylcholine Release by Human Recombinant Interleukin-1β in Guinea Pig Ileum	Shun-ichi Mameya, Takafumi Sawa and Kohtaro Taniyama	319
Preventive Effect of Rebamipide on Gastric Lesions Induced by Ischemia-Reperfusion in the Rat	Chi Dae Kim and Ki Whan Hong	340
Necessity of Newly Synthesized ATP by Creatine Kinase for Contraction of Permeabilized Longitudinal Muscle Preparations of Rat Proximal Colon	Tadayoshi Takeuchi, Akikazu Fujita, Toshiaki Ishii, Hideaki Nishio and Fumiaki Hata	429
Reversal of Cyclosporine A-Induced Alterations in Biliary Secretion by S-Adenosyl-L-Methionine in Rats	Emilio Fernández, Ana I. Galán, Dominica Morán, José M. González-Buitrago, María E. Muñoz and Rafael Jiménez	442
Different Molecular Forms of Basic Fibroblast Growth Factor (bFGF) Accelerate Duodenal Ulcer Healing in Rats	Stefano Kusstatscher, Zsuzsa Sandor, Sandor Szabo, Andrew Seddon and Peter Böhlen	456
Peripheral and Central Cholecystokinin Receptors Regulate Postprandial Intestinal Motility in the Rat	A. Rodríguez-Membrilla, V. Martínez and P. Vergara	486
Roles of Prostaglandins, Nitric Oxide and the Capsaicin-Sensitive Sensory Nerves in Gastroprotection Produced by Ecabet Sodium	Mine Kinoshita, Eisuke Kume and Hajime Tamaki	494
IMMUNOPHARMACOLOGY		
New Antiinflammatory Compounds that Inhibit Tumor Necrosis Factor Production: Probable Interaction with Protein Kinase C Activation	François Lang, Jean-Michel Robert, Philippe Boucrot, Lucien Welin and Jean-Yves Petit	171
NEUROPHARMACOLOGY		
Characterization of Nitric Oxide Generator-Induced Hippocampal [³H]Norepinephrine Release. I. The Role of Glutamate	Gyorgy Lonart and Kenneth M. Johnson	7
Characterization of Nitric Oxide Generator-Induced Hippocampal [³H]Norepinephrine Release. II. The Role of Calcium, Reverse Norepinephrine Transport and Cyclic 3',5'-Guanosine Monophosphate	Gyorgy Lonart and Kenneth M. Johnson	14
Ziprasidone (CP-88,059): A New Antipsychotic with Combined Dopamine and Serotonin Receptor Antagonist Activity	T. F. Steeger, P. A. Seymour, A. W. Schmidt, S. H. Zorn, D. W. Schulz, L. A. Lebel, S. McLean, V. Guanowsky, H. R. Howard, J. A. Lowe III and J. Heym	101

Effects of Cholinesterase Inhibitors and Clonidine Coadministration on Rat Cortex Neurotransmitters <i>In Vivo</i>	Gabriel Cuadra and Ezio Giacobini	228
Interactions of Dopaminergic and GABAergic Neurotransmission: Impact of 6-Hydroxydopamine Lesions into the Substantia Nigra of Rats	Mir Ahamed Hossain and Norman Weiner	237
<i>Alpha</i>-2 Adrenergic Modulation of Sleep: Time-of-Day-Dependent Pharmacodynamic Profiles of Dexmedetomidine and Clonidine in the Rat	Wesley F. Seidel, Mervyn Maze, William C. Dement and Dale M. Edgar	263
Microinjection of Baclofen in the Ventromedial Medulla of Rats: Antinociception at Low Doses and Hyperalgesia at High Doses	David A. Thomas, Malcolm K. McGowan and Donna L. Hammond	274
Age-Dependent Sensitivity of Rats to the Long-Term Effects of the Serotonergic Neurotoxicant (\pm)-3,4-Methylenedioxymethamphetamine (MDMA) Correlates with the Magnitude of the MDMA-Induced Thermal Response	Harry W. Broening, John F. Bowyer and William Slikker, Jr.	325
Effect of the 5-Hydroxytryptamine₂ Receptor Antagonist Itasetron (DAU 6215) on (+)-N-Allylnormetazocine-Induced Dopamine Release in the Nucleus Accumbens and in the Corpus Striatum of the Rat: An <i>In Vivo</i> Microdialysis Study	Marina Volonté, Angelo Ceci and Franco Borsini	358
Repeated Stimulation of Dopamine D₂-Like Receptors: Reduced Responsiveness of Nigrostriatal and Mesoaccumbens Dopamine Neurons to Quinpirole	David K. Pitts, Liping Wang, Mark D. Kelland, Arthur S. Freeman and Louis A. Chiodo	412
Chronic Antidepressant Treatment Facilitates G Protein Activation of Adenylyl Cyclase without Altering G Protein Content	Jiang Chen and Mark M. Rasenick	509
PROSTAGLANDINS, LEUKOTRIENES AND OTHER EICOSANOIDS		
Potent and Selective Inhibitors of Leukotriene A₄ Hydrolase: Effects on Purified Enzyme and Human Polymorphonuclear Leukocytes	Anders Wetterholm, Jesper Z. Haeggström, Bengt Samuelsson, Wei Yuan, Benito Munoz and Chi-Huey Wong	31
Immunological Characterization of Urinary 8-Epi-Prostaglandin F_{2α} Excretion in Man	Zhaoyue Wang, Giovanni Ciabattini, Christophe Créminon, John Lawson, Garret A. FitzGerald, Carlo Patrono and Jacques Maclouf	94
Leukotriene C₄ Receptors on Guinea Pig Tracheocytes	S. Prié, G. Guillemette, G. Boulay, P. Borgeat and P. Sirois	312
Preferential Binding of the Novel Prostaglandin SC-46275 to Canine Gastric <i>Versus</i> Intestinal Receptors	B. S. Tsai, R. H. Keith, W. E. Perkins, R. E. Walsh, C. P. Anglin, P. W. Collins, A. W. Gasielki, R. F. Bauer, P. H. Jones and T. S. Gaginella	368
TEI-3313, a Novel Prostaglandin A₁ Derivative, Prevents Bone Loss and Enhances Bone Formation in Immobilized Male Rats	Tomohiro Ohta, Yoshiaki Azuma, Hiroshi Kanatani, Mamoru Kiyoki and Yasuko Koshihara	450
RENAL PHARMACOLOGY		
Nonpeptide Endothelin Receptor Antagonists V: Prevention and Reversal of Acute Renal Failure in the Rat by SB 209670	Miklos Gellai, Malcolm Jugus, Tracey Fletcher, Ponnal Nambi, Eliot H. Ohlstein, John D. Elliott and David P. Brooks	200
Interactions of Nifedipine with the Renovascular Effects of Endothelin in Humans	Karin A. H. Kaasjager, Herman J. M. van Rijn, Hein A. Koomans and Ton J. Rabelink	306
TOXICOLOGY		
Time- and Concentration-Dependent Biphasic Effect of Ochratoxin A on Growth of Proximal Tubular Cells in Primary Culture	Michael Gekle, Carol A. Pollock and Stefan Silbermagl	397
Erratum		527