

VOLUME 260
MARCH 1992
NUMBER 3

The Journal of PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS

Contents

ANTI-INFLAMMATORIES

- Correlation of Anti-Inflammatory Activity with Peak Tissue Rather Than Peak Plasma Levels of BF389** Alison M. Bendele, Kenneth J. Ruterbories, Stephen M. Spaethe, Don N. Benslay, Terry D. Lindstrom, Sung J. Lee and Robert W. Naismith 1194

ANALGESICS

- Increased Urinary Morphine, Codeine and Tetrahydropapaveroline in Parkinsonian Patient Undergoing L-3,4-Dihydroxyphenylalanine Therapy: A Possible Biosynthetic Pathway of Morphine from L-3,4-Dihydroxyphenylalanine in Humans** K. Matsubara, S. Fukushima, A. Akane, S. Kobayashi and H. Shiono 974
- Cholecystokinin Administered Intrathecally Selectively Antagonizes Intracerebroventricular β -Endorphin-Induced Tail-Flick Inhibition in the Mouse** Leon F. Tseng and Keith A. Collins 1086
- Extremely Long-Lasting Antagonistic Actions of Nor-Binaltorphimine (nor-BNI) in the Mouse Tail-Flick Test** Peter Horan, Jill Taylor, Henry I. Yamamura and Frank Porreca 1237

AUTONOMIC PHARMACOLOGY

- Central 5-Hydroxytryptamine₂ Receptors Are Involved in the Adrenal Catecholamine-Releasing and Hyperglycemic Effects of the 5-Hydroxytryptamine Indirect Agonist *d*-Fenfluramine in the Conscious Rat** Francis Chaouloff, Sue H. Gunn and James B. Young 1008
- Pharmacological Properties of Potassium Currents in Swine Tracheal Smooth Muscle** Hsiu-Ming H. Saunders and Jerry M. Farley 1038
- Pharmacological Evaluation of JO 1870: Relation to the Potential Treatment of Urinary Bladder Incontinence** C. Soulard, X. Pascaud, F. J. Roman, A. Grouhel and J. L. Junien 1152
- Evidence for Postjunctional Release of ATP Evoked by Stimulation of Muscarinic Receptors in Ileal Longitudinal Muscles of Guinea Pig** Takeshi Katsuragi, Osamu Soejima, Takeo Tokunaga and Tatsuo Furukawa 1309

BEHAVIORAL PHARMACOLOGY

- Discriminative Stimulus Properties of the Serotonergic Compound Eltoprazine** Caroline E. Ybema, Jef L. Slangen, Berend Olivier and Jan Mos 1045
- The Effects of Chronic Buprenorphine Treatment on Cocaine and Food Self-Administration by Rhesus Monkeys** Nancy K. Mello, Scott E. Lukas, Jonathan B. Kamien, Jack H. Mendelson, John Drieze and Edward J. Cone 1185
- Zolpidem Behavioral Pharmacology in Baboons: Self-Injection, Discrimination, Tolerance and Withdrawal** Roland R. Griffiths, Christine A. Sannerud, Nancy A. Ator and Joseph V. Brady 1199

CARDIOVASCULAR PHARMACOLOGY

- Nitrovasodilators as a New Class of Ocular Hypotensive Agents** James A. Nathanson 956
- Evaluation of LY203647 on Cardiovascular Leukotriene D₄ Receptors and Myocardial Reperfusion Injury** Richard A. Hahn, Brian R. MacDonald, Emily Morgan, Brian D. Potts, C. John Parli, Lynn E. Rinkema, Celia A. Whitesitt and Winston S. Marshall 979

Contents continued on iv

The Relationship Between the Vitamin K Cycle Inhibition and the Plasma Anticoagulant Response at Steady-State S-Warfarin Conditions in the Rat	J. J. Mosterd and H. H. W. Thijssen	1081
Vasopressin Modulates Cerebrovascular Responses to Opioids in Newborn Pigs	W. M. Armstead, R. Mirro, S. L. Zuckerman and C. W. Leffler	1107
Amplification of <i>Alpha</i> Adrenergic Vasoconstriction in Canine Isolated Mesenteric Artery and Vein	H. Shimamoto, J.-P. Bourreau, C. Y. Kwan and E. E. Daniel	1119
Effects of Diltiazem on Glycolysis and Oxidative Metabolism in the Ischemic and Ischemic/Reperfused Heart	Gary D. Lopaschuk, Rick Barr and Richard Wambolt	1220
Mechanisms of the Cardioprotective Actions of WEB-2170, bapafant, a Platelet Activating Factor Antagonist, in Myocardial Ischemia and Reperfusion	Xin-Liang Ma, Andrew S. Weyrich, Stanley Krantz and Allan M. Lefer	1229
Coronary Vascular Injury Due to Ischemia-Reperfusion Is Reduced by Pentoxifylline	Ira M. Dauber, Edward J. Lesnefsky, Roger C. Ashmore, Douglas M. Martel, Frank M. Sheridan, John V. Weil and Lawrence D. Horwitz	1250
Dipeptidyl(amino)peptidase IV and Aminopeptidase M Metabolize Circulating Substance P <i>in Vivo</i>	Saleem Ahmad, Linhong Wang and Patrick E. Ward	1257
Cardiorespiratory Effects of the Novel Opioid Analgesic HP 736 in the Anesthetized Dog and Conscious Goat	John W. Hubbard, Kenneth W. Locke, Hubert V. Forster, Alan G. Brice, Larry G. Pan, Tim F. Lowry, Anne-Mette L. Forster, Matthew A. Forster, Michael Cornfeldt, Cheri L. Vanselous, R. Richard L. Hamer, Edward J. Glamkowski and Stuart Fielding	1268
Evaluation of N-0861, (\pm)-N⁶-Endonorboman-2-yl-9-methyladenine, as an A₁ Subtype-Selective Adenosine Receptor Antagonist in the Guinea Pig Isolated Heart	John C. Shryock, Holly Coleman Travagli and Luiz Belardinelli	1292
Cardiac Responses and Binding Sites for Endothelin in Normal and Cardiomyopathic Hamsters	Gordon T. Bolger, Robert Berry, Francine Liard, Michel Garneau and Jorge Jaramillo	1314
Stimulant Effects of Muscarinic Agonists in Embryonic Chick Ventricular Muscle. Are the Effects Mediated by Protein Kinase C?	Kanigula Mubagwa, Ana-Maria Vites and Achilles J. Pappano	1323
Inhibition by Amiloride and Quinacrine of Specific [³H] Nitrendipine Binding to Rat Cardiac Membranes	Mimi Stokke, Else Marie Hagelin, Claire Poulsson, Renuka Patel, Yemane Haile and Odd Brørs	1366
Binding of [¹²⁵I]Atrial Natriuretic Factor to Mouse Lung Membranes <i>in Vivo</i>: Characterization and Effects of Peptidase Inhibitors	A. Souque, C. Gros and J. C. Schwartz	1373
The Antiproteinuric Action of Enalapril in Stroke-Prone Spontaneously Hypertensive Rats is Unrelated to Alterations in Urinary Prostaglandins	Charles T. Stier, Jr., Keyvan Mahboubi, Vincent A. DiPippo, Seymour Levine and Praveen N. Chander	1410
CELLULAR AND MOLECULAR PHARMACOLOGY		
Bay K-8644 in Different Solvents Acts as a T Channel Antagonist and an L Channel Agonist	Lingyun Wu, Rui Wang, Edward Karpinski and Peter K. T. Pang	966
Mechanism of Inhibitory Effects of Azelastine on Smooth Muscle Contraction	Masatoshi Masuo, Tadahito Shimada and Toshio Kitazawa	1300
CHEMOTHERAPY		
Direct Measurement of Melphalan Conjugation with Glutathione: Studies with Human Melanoma Cells and Mammalian Liver	Thomas M. Guenther, Robert Whalen and Vesna Jevtović-Todorović	1331
DRUG METABOLISM AND DISPOSITION		
Enzymatic Basis for the Transesterification of Cocaine in the Presence of Ethanol: Evidence for the Participation of Microsomal Carboxylesterases	C. Scott Boyer and Dennis R. Petersen	939

Predictability of the <i>in Vivo</i> Metabolism of Verapamil from <i>in Vitro</i> Data: Contribution of Individual Metabolic Pathways and Stereoselective Aspects	Heyo K. Kroemer, Hirotoshi Echizen, Hugo Heidemann and Michel Eichelbaum	1052
A New Approach to the Study of Ifosfamide Metabolism by the Analysis of Human Body Fluids with ³¹P Nuclear Magnetic Resonance Spectroscopy	Robert Martino, François Crasnier, Nadia Chouini-Lalanne, Véronique Gilard, Ulf Niemeyer, Marcel de Forni and Marie-C. Malet-Martino	1133
<i>In Vitro</i> N-Glucuronidation of a Novel Antiepileptic Drug, Lamotrigine, by Human Liver Microsomes	Jacques Magdalou, Regine Herber, Roselyne Bidault and Gerard Siest	1166
Colchicine-Specific Fab Fragments Alter Colchicine Disposition in Rabbits	Alain E. Sabouraud, Michel Urtizberea, Nathalie J. Cano, Michel Grandgeorge, Jean-Marc Rouzioux and Jean-Michel G. Scherrmann	1214
Long-Term Diabetes Alters the Hepatobiliary Clearance of Acetaminophen, Bilirubin and Digoxin	John B. Watkins III and Susan E. Sherman	1337
Chiral Inversion and Stereoselective Glutathione Conjugation of the Four 2-Bromo-3-Methylvaleric Acid Stereoisomers in the Rat <i>in Vivo</i> and <i>in Vitro</i>	Martine Polhuijs, Alexander C. Tergau and Gerard J. Mulder	1349
The Antipsychotic Clozapine is Metabolized by the Polymorphic Human Microsomal and Recombinant Cytochrome P450 2D6	V. Fischer, B. Vogels, G. Maurer and R. E. Tynes	1355
Selective Inhibition of Rat Hepatic Microsomal Cytochrome P-450. I. Effect of the <i>in Vivo</i> Administration of Cimetidine	T. Chang, M. Levine, S. M. Bandiera and G. D. Bellward	1441
Selective Inhibition of Rat Hepatic Microsomal Cytochrome P-450. II. Effect of the <i>in Vitro</i> Administration of Cimetidine	T. Chang, M. Levine and G. D. Bellward	1450
ENDOCRINE PHARMACOLOGY		
The Role of the Fourth Cerebroventricle in Nicotine-Stimulated Prolactin Release in the Rat: Involvement of Catecholamines	Shannon G. Matta and Burt M. Sharp	1285
Effects of Repetitive Administration of Recombinant Human Interleukin-1β, an Analog or Corticotropin-Releasing Hormone Combined with Lysine Vasopressin on Rats with Glucocorticoid-Induced Secondary Adrenocortical Insufficiency	Norihiko Murakami, Junichi Fukata, Takeshi Usui, Yoshiyuki Naito, Tomoko Tominaga, Yoshikatsu Nakai, Yoshihiro Masui, Kenichiro Nakao and Hiroo Imura	1344
GASTROINTESTINAL PHARMACOLOGY		
Effects of a Prostacyclin Analog, U-68,215, on Gastric Acid Secretion, Gastric Emptying and Systemic Blood Pressure in Primates	Terez Shea-Donohue, Ambukarasi Kandasamy and Andre Dubois	1023
Gastrointestinal Motor Alterations Induced by Precipitated Benzodiazepine Withdrawal in Rats	J. Martinez, M. J. Fargeas and L. Bueno	1067
Neurally Mediated Relaxation of Opossum Internal Anal Sphincter: Influence of Superoxide Anion Generator and the Scavenger	Sushanta Chakder and Satish Rattan	1113
IMMUNOPHARMACOLOGY		
Modulation of Human Basophil Histamine Release by Protein Kinase C Inhibitors Differs with Secretagogue and with Inhibitor	Håkan Bergstrand, Britta Lundquist, Kostas Karabelas and Peter Michelsen	1028
The Effects of FK-506, a Novel and Potent Immunosuppressant, upon Murine Coxsackievirus B3 Myocarditis	Yuji Hiraoka, Chiharu Kishimoto, Masahiko Kurokawa, Hiroshi Ochiai and Shigetake Sasayama	1386
NEUROPHARMACOLOGY		
High-Affinity Dextromethorphan and (+)-3-(3-Hydroxyphenyl)-N-(1-Propyl)Piperidine Binding Sites in Rat Brain. Allosteric Effects of Ropizine	Martine Klein and José M. Musacchio	990
Characterization of Brain Imidazoline Receptors in Normotensive and Hypertensive Rats: Differential Regulation	Gabriel Olmos, Antonio Miralles, Fernando Barturen and Jesus A. Garcia-	1000

by Chronic Imidazoline Drug Treatment	Sevilla	
Beneficial Effects of Naftidrofuryl Oxalate on Brain Regional Energy Metabolism after Microsphere-Induced Cerebral Embolism	Keiko Miyake, Taku Taguchi, Kouichi Tanonaka, Tomoko Horiguchi, Norio Takagi and Satoshi Takeo	1058
<i>In Vitro</i> and <i>in Vivo</i> Inhibition of <i>N</i>-Acetyl-L-Aspartyl-L-Glutamate Catabolism by <i>N</i>-Acylated L-Glutamate Analogs	V. Servat, T. Galli, A. Cheramy, J. Glowinski and S. Lavielle	1093
α-Amino-3-Hydroxy-5-Methylisoxazole-4-Propionate/Kainate Receptor Antagonists in the Nucleus Accumbens and Ventral Pallidum Decrease the Hypermotility Response to Psychostimulant Drugs	David L. Willins, Lane J. Wallace, Duane D. Miller and Norman J. Uretsky	1145
DAT-582, a Novel Serotonin₃ Receptor Antagonist, Is a Potent and Long-Lasting Antiemetic Agent in the Ferret and Dog	Naoyuki Yoshida, Hiroko Omoya and Tsugutaka Ito	1159
Effects of Ketamine on Sensory Perception: Evidence for a Role of N-Methyl-D-Aspartate Receptors	Ivar Øye, Ole Paulsen and Atle Maurset	1209
Low-Level N-Methyl-D-Aspartate Receptor Activation Provides a Purinergic Inhibitory Threshold Against Further N-Methyl-D-Aspartate-Mediated Neurotransmission in the Cortex	Constance G. Craig and Thomas D. White	1278
Binding of Typical and Atypical Antipsychotic Agents to Transiently Expressed 5-HT_{1C} Receptors	Bryan L. Roth, Roland D. Ciaranello and Herbert Y. Meltzer	1361
Tetraalkylammonium Ion Block of Potassium Currents in Mouse Neuroblastoma Cells	F. N. Quandt and W. B. Im	1379
Dopaminergic Neurotoxicity of 1-Methyl-4-Phenylpyridinium Analogs in Cultured Neurons: Relationship to the Dopamine Uptake System and Inhibition of Mitochondrial Respiration	Michael S. Saporito, Richard E. Heikkilä, Stephen K. Youngster, William J. Nicklas and Herbert M. Geller	1400
Somatostatin Causes Vasoconstriction, Reduces Blood Flow and Increases Vascular Permeability in the Rat Central Nervous System	Joseph B. Long, Donald D. Rigamonti, Kumi Dosaka, Joyce M. Kraimer and Alberto Martinez-Arizala	1425
Cholecystokinin_A and Cholecystokinin_B Receptors in Neurons of the Brainstem Solitary Complex of the Rat: Pharmacological Identification	P. Branchereau, G. A. Böhme, J. Champagnat, M.-P. Morin-Surun, C. Durieux, J. C. Blanchard, B. P. Roques and M. Denavit-Saubié	1433
PHARMACOLOGY OF SUBSTANCE ABUSE		
Comparison of the Effects of the Uncompetitive N-Methyl-D-Aspartate Antagonist (\pm)-5-Aminocarbonyl-10,11-Dihydro-5H-Dibenzo[<i>a,d</i>]Cyclohepten-5,10-Imine (ADCI) with Its Structural Analogs Dizocilpine (MK-801) and Carbamazepine on Ethanol Withdrawal Seizures	Kathleen A. Grant, Lawrence D. Snell, Michael A. Rogawski, Andrew Thurkauf and Boris Tabakoff	1017
Behavioral Effects of Novel Cocaine Analogs: A Comparison with <i>in Vivo</i> Receptor Binding Potency	Elizabeth J. Cline, Ursula Scheffel, John W. Boja, F. Ivy Carroll, Jonathan L. Katz and Michael J. Kuhar	1174
Inhibition of Protein Phosphorylation by Opioid-Inhibited Adenylyl Cyclase in Rat Brain Membranes	Lynne M. Fleming, Gabriel Ponjee and Steven R. Childers	1416
PROSTAGLANDINS, LEUKOTRIENES, AND OTHER EICOSANOIDS		
Mechanism of Inositol 1,4,5-Trisphosphate-Induced Aggregation in Saponin-Permeabilized Platelets	Irina Knezevic, Jeanette P. Dieter and Guy C. Le Breton	947
Prostaglandin E₁-Induced Vasorelaxation in Porcine Coronary Arteries	Satoru Fukuda, Mutsumi Morioka, Tsuyoshi Tanaka and Koki Shimoji	1128
Indirect Actions of Thapsigargin on Human Platelets: Activation of Eicosanoid Biosynthesis and Cellular Signaling Pathways	Kenneth C. Malcolm and Frank A. Fitzpatrick	1244
PULMONARY PHARMACOLOGY		
The Effect of Sensory Nerve Depletion on Cholinergic Neurotransmission in Guinea Pig Airways	David Stretton, Maria G. Belvisi and Peter J. Barnes	1073

Characterization of the Contractile Serotonergic Receptor in Guinea Pig Trachea with Agonists and Antagonists	Stephanie W. Watts and Marlene L. Cohen	1101
Functional Innervation of Pig Tracheal Smooth Muscle: Neural and Nonneural Mechanisms of Relaxation	M. S. Kannan and D. E. Johnson	1180
RENAL PHARMACOLOGY		
Characterization of Renal Angiotensin II Receptors Using Subtype Selective Antagonists	Richard M. Edwards, Elwood J. Stack, Edwin F. Weidley, Nambi Aiyar, Richard M. Keenan, David T. Hill and Joseph Weinstock	933
Role of Endothelium-Derived Relaxing Factor in the <i>in Vivo</i> Renal Vascular Action of Adenosine in Dogs	Michiaki Okumura, Katsuyuki Miura, Yutaka Yamashita, Tokihito Yukimura and Kenjiro Yamamoto	1262
TOXICOLOGY		
Reversal of Desipramine Toxicity in Rats Using Drug-Specific Antibody Fab' Fragment: Effects on Hypotension and Interaction with Sodium Bicarbonate	Gregory J. Brunn, Daniel E. Keyler, Susan M. Pond and Paul R. Pentel	1392
ERRATUM		1456
Index, Volume 260, January-March, 1992		1457