

VOLUME 260
FEBRUARY 1992
NUMBER 2

The Journal of PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS

Contents

ANALGESICS

- | | | |
|---|--|-----|
| Spinal Opioid <i>Delta</i> Antinociception in the Mouse: Mediation by a 5'-NTII-Sensitive <i>Delta</i> Receptor Subtype | A. Mattia, S. C. Farmer, A. E. Takemori, M. Sultana, P. S. Portoghese, H. I. Mosberg, W. D. Bowen and F. Porreca | 518 |
| Suppression by Spinal <i>Alpha</i> -2 Agonists of Motor and Autonomic Responses Evoked by Low- and High-Intensity Thermal Stimuli | Shigeru Saeki and Tony L. Yaksh | 795 |

AUTONOMIC PHARMACOLOGY

- | | | |
|---|---|-----|
| Complex Prejunctional Actions of the D ₂ Dopamine Agonists N-0923 and N-0924 in the Rat Tail Artery | Donna J. Friedman, Diana N. Krause and Sue Piper Duckles | 568 |
| Neuromodulatory Effects of Atrial Natriuretic Peptides Correlate with an Inhibition of Adenylate Cyclase but Not an Activation of Guanylate Cyclase | James G. Drewett, Richard J. Ziegler and George J. Trachte | 689 |
| Influence of Age on Control of Norepinephrine Release from the Rat Tail Artery | John Buchholz, Henry Tsai, Donna Friedman and Sue Piper Duckles | 722 |
| Effect of Yohimbine on Renal Sympathetic Nerve Activity and Renal Norepinephrine Spillover in Anesthetized Rabbits | Bela Szabo, Alexander Schramm and Klaus Starke | 780 |
| Involvement of Nitric Oxide in Nerve-Mediated Inhibition and Action of Vasoactive Intestinal Peptide in Colonic Smooth Muscle | J. D. Huizinga, J. Tomlinson and J. Pintin-Quezada | 803 |
| Prostaglandin Synthesis Elicited by Adrenergic Stimuli is Mediated via <i>Alpha</i> -2C and <i>Alpha</i> -1A Adrenergic Receptors in Cultured Smooth Muscle Cells of Rabbit Aorta | Canan Nebigil and Kafait U. Malik | 849 |

BEHAVIORAL PHARMACOLOGY

- | | | |
|---|--|-----|
| Antagonism Studies with BMY-7378 and NAN-190: Effects on 8-Hydroxy-2-(di- <i>n</i> -Propylamino)Tetraline-Induced Increases in Punished Responding of Pigeons | Stephen T. Ahlers, Ben Avi Weissman and James E. Barrett | 474 |
|---|--|-----|

CARDIOVASCULAR PHARMACOLOGY

- | | | |
|---|---|-----|
| Demonstration of Vasorelaxant Activity with an A ₁ -Selective Adenosine Agonist in Porcine Coronary Artery: Involvement of Potassium Channels | Linda A. Merkel, Rodney W. Lappe, Luz M. Rivera, Bryan F. Cox and Mark H. Perrone | 437 |
| The Catecholamine-Mediated Positive Inotropic Effect of Simple Quinones is Related to Superoxide Anion Generation | Maura Floreani and Francesca Carpenedo | 468 |
| Purinergic Relaxation and Hyperpolarization in Guinea Pig and Rabbit Coronary Artery: Role of the Endothelium | K. D. Keef, J. S. Pasco and D. M. Eckman | 592 |
| Coronary Blood Flow in Rats is Dependent on the Release of Vascular Nitric Oxide | Leslie F. Jones and Michael J. Brody | 627 |
| Calcium Utilization Coupled to Stimulation of Postjunctional <i>Alpha</i> -1 and <i>Alpha</i> -2 Adrenoceptors in Isolated Human Resistance Arteries | Henrik Nielsen, Frank V. Mortensen, Hans K. Pilegaard, J. Michael Hasenkam and Michael J. Mulvany | 637 |
| Regional Variation in Acute Vascular Homologous Tachyphylaxis | Frederick Jia-Pei Miao and Tony Jer-Fu Lee | 644 |
| Conversion of Nitroglycerin to Nitric Oxide in Microsomes of the Bovine Coronary Artery Smooth Muscle Is Not Primarily Mediated by Glutathione-S-Transferases | Suk-jae Chung, Saeho Chong, Prem Seth, Chan Y. Jung and Ho-Leung Fung | 652 |
| Cardioprotection and Attenuation of Endothelial Dysfunction by Organic Nitric Oxide Donors in Myocardial Ischemia-Reperfusion | Martin R. Siegfried, Joseph Erhardt, Timothy Rider, Xin-Liang Ma and Allan M. Lefer | 668 |

Contents continued on iv

Interaction of Non-Arginine Compounds with the Endothelium-Derived Relaxing Factor Inhibitor, <i>N</i>^C-Monomethyl L-Arginine	George Thomas and Peter W. Ramwell	676
Beneficial Effects of TCV-309, a Novel, Potent and Selective Platelet Activating Factor Antagonist in Endotoxin and Anaphylactic Shock in Rodents	Zen-Ichi Terashita, Masaki Kawamura, Muneo Takatani, Susumu Tsushima, Yoshimi Imura and Kohei Nishikawa	748
Prolonged Exposure to Catecholamines Enhances Sensitivity of Smooth Muscle Relaxation Induced by Sodium Nitroprusside and Atriopeptin	Zhuo-Wei Hu, Kazou Honda, Ferid Murad and Brian B. Hoffman	756
Pharmacological Profile of HS-142-1, A Novel Nonpeptide Atrial Natriuretic Peptide Antagonist of Microbial Origin. I. Selective Inhibition of the Actions of Natriuretic Peptides in Anesthetized Rats	Tomoyuki Sano, Yoshikazu Morishita, Yuzuru Matsuda and Koji Yamada	825
CELLULAR AND MOLECULAR PHARMACOLOGY		
Effect of Endothelin-1 on Guinea Pig Gallbladder Smooth Muscle <i>in Vitro</i>	Chafiq Moumami, Gary W. Gullikson and Timothy S. Gaginella	549
Blockade of the ATP-Sensitive K⁺ Channel by 5-Hydroxydecanoate in Guinea Pig Ventricular Myocytes	Tatsuto Notsu, Isao Tanaka, Makoto Takano and Akinori Noma	702
DRUG METABOLISM AND DISPOSITION		
Effect of Benzylpenicillin on the Disposition of Cefodizime in Rats: No Net Effect on Total Clearance due to Decreased Hepatobiliary Clearance and Increased Renal Clearance	Hitoshi Matsushita, Hiroshi Suzuki, Yuichi Sugiyama, Yasufumi Sawada, Tatsuji Iga, Yasuro Kawaguchi and Manabu Hanano	499
Role of Electronic Factors in Binding and Reduction of Azo Dyes by Hepatic Microsomes	Shmuel Zbaida and Walter G. Levine	554
Cocaine and Metabolite Concentrations in the Fetal Guinea Pig after Chronic Maternal Cocaine Administration	Jennifer A. Sandberg and George D. Olsen	587
Evidence of Significant Absorption of Antipyrine from Urinary Bladder of Rats	James T. Dalton, Michael D. Harrington and Jessie L.-S. Au	608
Hemoglobin Adduct and Hepatic- and Urinary Bladder-DNA Adduct Levels in Rapid and Slow Acetylators Syrian Inbred Hamsters Administered 2-Aminofluorene	Thomas J. Flammang, Tokunbo Yerokun, Matthew S. Bryant, Letha H. Couch, Ward G. Kirlin, Kap J. Lee, Fredrick Ogolla, Ronald J. Ferguson, Glenn Talaska and David W. Hein	865
ENDOCRINE PHARMACOLOGY		
Tin-Protoporphyrin: A Potent Inhibitor of Hemoprotein-Dependent Steroidogenesis in Rat Adrenals and Testes	Mahin D. Maines and G. Michael Trakshel	909
GASTROINTESTINAL PHARMACOLOGY		
H⁺ Coupled Active Transport of Bestatin <i>via</i> the Dipeptide Transport System in Rabbit Intestinal Brush-Border Membranes	Ken-Ichi Inui, Yoshiko Tomita, Toshiya Katsura, Tomonobu Okano, Mikihiisa Takano and Ryohei Hori	482
Chronic Ethanol Feeding Produces a Muscarinic Receptor Up-Regulation, but not a Muscarinic Supersensitivity in Lower Esophageal Sphincter Muscle	Ali Keshavarzian, John H. Gordon, Chris Willson, Glenn Urban and Jeremy Z. Fields	601
Mechanism of Relaxation Induced by K⁺ and Nicotine in Dog Duodenal Longitudinal Muscle	Noboru Toda, Hiroshi Baba, Yuji Tanobe and Tomio Okamura	697
Release of Endogenous Noradrenaline from the Vascularly Perfused Rat Stomach <i>in Vitro</i>: Modulation by Pre- and Postsynaptic Adrenoceptors	Kunihiko Yokotani, Yasunobu Okuma and Yoshitsugu Osumi	728
A Role for Phospholipid-Derived Inflammatory Mediators in Intestinal Anaphylaxis in the Rat	Wallace K. MacNaughton, Anthony G. Catto-Smith and D. Grant Gall	773
IMMUNOPHARMACOLOGY		
Pharmacokinetics/Pharmacodynamics of Ketoconazole-Prednisolone Interaction	B. Ulrich, F. J. Frey, R. F. Speck and B. M. Frey	487

Chronic Morphine Administration Impairs Cell-Mediated Immune Responses in Swine	Thomas W. Molitor, Antonio Morilla, Jack M. Risdahl, Michael P. Murtaugh, Chun C. Chao and Phillip K. Peterson	581
Cyclosporine and FK506 Inhibition of Murine Mast Cell Cytokine Production	Stephen M. Hatfield and Neal W. Roehm	680
NEUROPHARMACOLOGY		
Mechanisms of Vomiting Induced by Serotonin-3 Receptor Agonists in the Cat: Effect of Vagotomy, Splanchnicectomy or Area Postrema Lesion	Alan D. Miller and Satoshi Nonaka	509
Effects of Fluoxetine on Convulsions and on Brain Serotonin as Detected by Microdialysis in Genetically Epilepsy-Prone Rats	J. W. Dailey, Q. S. Yan, P. K. Mishra, R. L. Burger and P. C. Jobe	533
Antagonism by Antimuscarinic and Neuroleptic Compounds at the Five Cloned Human Muscarinic Cholinergic Receptors Expressed in Chinese Hamster Ovary Cells	Carolyn Bolden, Bernadette Cusack and Elliott Richelson	576
Characterization of 5-Hydroxytryptamine_{1B} Receptors in Rat Spinal Cord via [¹²⁵I]Iodocyanopindolol Binding and Inhibition of [³H]5-Hydroxytryptamine Release	Izuru Matsumoto, Michelle R. Combs and David J. Jones	614
Identification of Multiple Muscarinic Binding Site Subtypes in Cat and Human Cerebral Vasculature	François Dauphin and Edith Hamel	660
Relief of Experimental Spasticity and Anxiolytic/Anticonvulsant Actions of the <i>Alpha</i>-Amino-3-Hydroxy-5-Methyl-4-Isoxazolepropionate Antagonist 2,3-Dihydroxy-6-Nitro-7-Sulfamoyl-Benzo(F)Quinoxaline	Lechoslaw Turski, Poul Jacobsen, Tage Honoré and David N. Stephens	742
Differential Coupling of Somatostatin₁ Receptors to Adenylyl Cyclase in the Rat Striatum vs. the Pituitary and Other Regions of the Rat Brain	Karen Raynor and Terry Reisine	841
5-HT₂ Receptor Antagonists Reverse Amphetamine-Induced Slowing of Dopaminergic Neurons by Interfering with Stimulated Dopamine Synthesis	Stephen M. Sorensen, Teresa M. Humphreys, Vicki L. Taylor and Christopher J. Schmidt	872
Genetic Covariation in Low Alcohol-Sensitive and High Alcohol-Sensitive Selected Lines of Rats: Behavioral and Electrophysiological Sensitivities to the Depressant Effects of Ethanol and the Development of Acute Neuronal Tolerance to Ethanol <i>in Situ</i> at Generation Eight	Michael R. Palmer, J. Timothy Harlan and Karen Spuhler	879
Electrophysiological Effects of Ethanol on Hippocampal and Cerebellar Neurons Cografted with Locus Coeruleus <i>in Oculo</i>: Role of the Noradrenergic Circuitry	Michael R. Palmer and Ann-Charlotte E. Granholm	887
Pharmacological Characterization of <i>in Vivo</i> [³H]Ifenprodil Binding Sites in the Mouse Brain	J. Benavides, B. Peny, J. Allen and B. Scatton	896
Pharmacological Characterization of 5-Hydroxytryptamine-Induced Apnea in the Rat	Mitsuhiro Yoshioka, Yukiko Goda, Hiroko Togashi, Machiko Matsumoto and Hideya Saito	917
Neuroprotective Effects of the N-Methyl-D-Aspartate Receptor Antagonists Ifenprodil and SL-82,0715 on Hippocampal Cells in Culture	Ismail A. Shalaby, Bert L. Chenard, Mary A. Prochniak and Todd W. Butler	925
PHARMACOLOGY OF SUBSTANCE ABUSE		
Heroin, 6-Acetylmorphine and Morphine Effects on Threshold for Rewarding and Aversive Brain Stimulation	Carol B. Hubner and Conan Kornetsky	562
The Influence of Environmental Temperature on the Transient Effects of Methamphetamine on Dopamine Levels and Dopamine Release in Rat Striatum	John F. Bowyer, A. William Tank, Glenn D. Newport, William Slikker Jr., Syed F. Ali and R. Robert Holson	817
PROSTAGLANDINS, LEUKOTRIENES, AND OTHER EICOSANOIDS		
Interspecies Differences in Thromboxane Receptors: Studies with Thromboxane Receptor Antagonists in Rat and Guinea Pig Smooth Muscles	Martin L. Ogletree and Guy T. Allen	789
PULMONARY PHARMACOLOGY		
5-Hydroxytryptamine Receptor Activity of the Dopamine Receptor Agonist Fenoldopam in Canine Tracheal Smooth Muscle	Daniel D. Gretler, Kevin C. Jones and Michael B. Murphy	491

Endothelium-Dependent Nonadrenergic, Noncholinergic Neural Relaxation in Guinea Pig Pulmonary Artery	S. F. Liu, D. E. Crawley, T. W. Evans and P. J. Barnes	541
Acetylated Endothelin-1 is a Constrictor in Guinea Pig Lung Vasculture but not in Isolated Vascular Strips	Harold I. Magazine, Asrar B. Malik, Cathy A. Bruner and Thomas T. Andersen	632
Pharmacologic Evaluation of A23187-Induced Contractions of Three Distinct Preparations of Guinea Pig Lung Parenchymal Strips	Wai-Shiu Fred Wong, Alison M. Bendele and Jerome H. Fleisch	714
Histamine Receptors on Human Isolated Pulmonary Arterial Muscle Preparations: Effects of Endothelial Cell Removal and Nitric Oxide Inhibitors	José Luis Ortiz, Carlos Labat, Xavier Norel, Isabelle Gorenne, Jeanne Verley and Charles Brink	762
Biochemical and Pharmacological Activities of SR 26831, a Potent and Selective Elastase Inhibitor	J. M. Herbert, D. Frehel, M. P. Rosso, E. Seban, C. Castet, O. Pepin, J. P. Maffrand and G. Le Fur	809
Thromboxane A₂ Accounts for Bronchoconstriction but not for Platelet Sequestration and Microvascular Albumin Exchanges Induced by fMLP in the Guinea Pig Lung	M. F. Bureau, F. De Clerck, J. Lefort, C. D. Arreto and B. B. Vargaftig	832
RENAL PHARMACOLOGY		
Renal and Antihypertensive Effects of a Novel Eukalemic Diuretic, ICI 207,828	S. T. Kau, B. B. Howe, P. A. Johnston, J. H.-Y. Li, T. J. Halterman, J. S. Zuzack, K. Leszczynska, C. L. Yochim, J. A. Schwartz and R. E. Giles	450
Evaluation of the Renal Site of Action of a Novel, Eukalemic Diuretic, ICI 207,828	Paul A. Johnston and Sen T. Kau	458
Reduced Glomerular Hypertrophy by Somatostatin Analog, SMS 201-995, in the Subtotal Nephrectomized Rats Fed High-Protein Meals	Jiro Uemasu, Kazunori Godai, Akihide Tokumoto and Hironaka Kawasaki	505
Time-Dependent Protective Effects of Calcium Channel Blockers on Anoxia- and Hypoxia-Induced Proximal Tubule Injury	Antonio R. P. Almeida, Derek Bunnachak, Michel Burnier, Jack F. M. Wetzels, Thomas J. Burke and Robert W. Schrier	526
Subtype-Selective <i>Alpha</i>-1 Adrenoceptor Alkylation in the Rat Kidney and its Effect on the Vascular Pressor Response	Abdelhamid M. Elhawary, William A. Pettinger and Dennis W. Wolff	709
Affinity of Different Local Anesthetic Drugs and Catecholamines for the Contraluminal Transport System for Organic Cations in Proximal Tubules of Rat Kidneys	E. Brändle, G. Fritsch and J. Greven	734
Comparative Study of the Effects of Furosemide, Ethacrynic Acid and Bumetanide on the Lithium Clearance and Diluting Segment Reabsorption in Humans	J. J. Beutler, W. H. Boer, H. A. Koomans and E. J. Dorhout Mees	768
Brief Transient Ischemia Induces Long-Term Depletion of Norepinephrine Without Affecting the Aromatic Amino Acid Decarboxylase and Monoamine Oxidase Activities in the Rat Kidney	P. Soares-da-Silva, M. H. Fernandes, A. Albino-Teixeira, I. Azevedo and M. Pestana	902
TOXICOLOGY		
Age-Dependent Gentamicin Experimental Nephrotoxicity	Denis Beauchamp, Pierrette Gourde, Guy Thériault and Michel G. Bergeron	444
Effect of Chronic Ethanol Diet on Expression of Gonadotropin Genes in the Male Rat	Iiris Salonen, Pirjo Pakarinen and Ilpo Huhtaniemi	463
Botulinum C₂ Toxin and Steroid Production in Adrenal Y-1 Cells: The Role of Microfilaments in the Toxin-Induced Increase in Steroid Release	Robert V. Considine, Lance L. Simpson and Joseph R. Sherwin	859