

## CONTENTS

## ACCELERATED COMMUNICATIONS

- JOSEPH RIMLAND, WINNIE XIN, PAUL SWEETNAM, KIYOFUMI SAJJOH, ERIC J. NESTLER, AND RONALD S. DUMAN. Sequence and Expression of a Neuropeptide Y Receptor cDNA ..... 869
- DIANNE M. PEREZ, MICHAEL T. PIASCIK, AND ROBERT M. GRAHAM. Solution-Phase Library Screening for the Identification of Rare Clones: Isolation of an  $\alpha_{1D}$ -Adrenergic Receptor cDNA ..... 876
- S. REGUNATHAN, M. P. MEELEY, AND D. J. REIS. Clonidine-Displacing Substance from Bovine Brain Binds to Imidazoline Receptors and Releases Catecholamines in Adrenal Chromaffin Cells ..... 884

## ARTICLES

- MICHAEL S. VINCENT AND JOSEPH A. NEAR. Purification of a [ $^3\text{H}$ ]Dihydrotetrabenazine-Binding Protein from Bovine Adrenal Medulla ..... 889
- JAMES G. GRANNEMAN, KRISTINE N. LAHNERS, AND ARCHANA CHAUDHRY. Molecular Cloning and Expression of the Rat  $\beta_3$ -Adrenergic Receptor ..... 895
- CHANDRA SHEKHAR K. MAYANIL, RICARDO M. RICHARDSON, AND M. MARLENE HOSEY. Subtype-Specific Antibodies for Muscarinic Cholinergic Receptors. I. Characterization Using Transfected Cells and Avian and Mammalian Cardiac Membranes ..... 900
- RICARDO M. RICHARDSON, CHANDRA SHEKHAR K. MAYANIL, AND M. MARLENE HOSEY. Subtype-Specific Antibodies for Muscarinic Cholinergic Receptors. II. Studies with Reconstituted Chick Heart Receptors and the GTP-Binding Protein  $G_0$  ..... 908
- JAMES FÉTHIÈRE AND ANDRÉ DE LÉAN. Pharmacological Evidence for the Heterogeneity of Atrial Natriuretic Factor- $R_1$  Receptor Subtype ..... 915
- TRUDY L. CORNWELL, KATHERINE B. PRYZWANSKY, TODD A. WYATT, AND THOMAS M. LINCOLN. Regulation of Sarcoplasmic Reticulum Protein Phosphorylation by Localized Cyclic GMP-Dependent Protein Kinase in Vascular Smooth Muscle Cells ..... 923
- MORDECAI P. BLAUSTEIN, ROBERT S. ROGOWSKI, MARY J. SCHNEIDER, AND BRUCE K. KRUEGER. Polypeptide Toxins from the Venoms of Old World and New World Scorpions Preferentially Block Different Potassium Channels ..... 932
- LUBO ZHANG, BURTON HOROWITZ, AND IAIN L. O. BUXTON. Muscarinic Receptors in Canine Colonic Circular Smooth Muscle. I. Coexistence of  $M_2$  and  $M_3$  Subtypes ..... 943
- LUBO ZHANG AND IAIN L. O. BUXTON. Muscarinic Receptors in Canine Colonic Circular Smooth Muscle. II. Signal Transduction Pathways ..... 952
- SCOTT WADLER AND CHIA-PING HUANG YANG. Reversal of Doxorubicin Resistance by Hydrophobic, But Not Hydrophilic, Forskolins ..... 960
- HIROMU SAKURAI, TAKAO MIKI, YASUHIRO IMAKURA, MASAYUKI SHIBUYA, AND KUO-HSIUNG LEE. Metal- and Photo-Induced Cleavage of DNA by Podophyllotoxin, Etoposide, and Their Related Compounds ..... 965

*Continued*

MOLECULAR PHARMACOLOGY (ISSN 0026-895x) is an official publication of The American Society for Pharmacology and Experimental Therapeutics and is published monthly, two volumes a year, beginning in January and July, by Williams & Wilkins, 428 East Preston Street, Baltimore, MD 21202-3993. Price per year: USA individual rate \$100; all other countries, surface mail \$130. USA institutional rate \$210, all other countries, surface mail \$240. Single copies \$18 (\$21 foreign). (Prices subject to change.) Indexed by *Index Medicus*, *Current Contents/Life Sciences*, *Excerpta Medica*, and *Current Awareness in Biological Sciences*. All subscription orders should be addressed to Molecular Pharmacology, 428 East Preston Street, Baltimore, MD 21202-3993.

Second Class Postage paid at Baltimore, MD, and at additional mailing offices. The GST Tax number for Canadian subscribers is 123394371. POSTMASTER: Send address changes to MOLECULAR PHARMACOLOGY, 428 East Preston Street, Baltimore, MD 21202-3993.

Copyright © 1991 by The American Society for Pharmacology and Experimental Therapeutics.

# CONTENTS (cont'd)

RICHARD J. HUGHES, MARTHE J. HOWARD, JAMES M. ALLEN, AND PAUL A. INSEL. Decreased $\beta_2$ -Adrenergic Receptor mRNA Expression in Receptor-Deficient S49 Lym- phoma Cells .....	974
LEONARDO PARDO, JESÚS GIRALDO, MIGUEL MARTÍN, AND MERCEDES CAMPILLO. Theoretical Studies on the Histamine H <sub>2</sub> Receptor: Construction of a Receptor Model Based on the Structural Properties of Dimaprit and N <sup>α</sup> -Guanylhistamine .....	980
VERA L. TRAINER, WILLIAM J. THOMSEN, WILLIAM A. CATTERALL, AND DANIEL G. BADEN. Photoaffinity Labeling of the Brevetoxin Receptor on Sodium Channels in Rat Brain Synaptosomes .....	988
KELVIN W. GEE AND NANCY C. LAN. $\gamma$ -Aminobutyric Acid <sub>A</sub> Receptor Complexes in Rat Frontal Cortex and Spinal Cord Show Differential Responses to Steroid Modulation .	995
CHARLES KENNEDY AND GRAEME HENDERSON. $\mu$ -Opioid Receptor Inhibition of Calcium Current: Development of Homologous Tolerance in Single SH-SY5Y Cells After Chronic Exposure to Morphine <i>In Vitro</i> .....	1000
J. CHRISTOPHER SILL, CINDY UHL, SCOTT ESKURI, RUSSELL VAN DYKE, AND JAMES TARARA. Halothane Inhibits Agonist-Induced Inositol Phosphate and Ca <sup>2+</sup> Signaling in A7r5 Cultured Vascular Smooth Muscle Cells .....	1006
M. MCKINNEY, J. H. MILLER, V. A. GIBSON, L. NICKELSON, AND S. AKSOY. Interactions of Agonists with M2 and M4 Muscarinic Receptor Subtypes Mediating Cyclic AMP Inhibition .....	1014
MARIO G. CARDOZO AND A. J. HOPFINGER. Molecular Mechanics and Molecular Dynamics Studies of the Intercalation of Dynemicin-A with Oligonucleotide Models of DNA ...	1023
T. R. NARASIMHAN, S. SAFE, H. J. WILLIAMS, AND A. I. SCOTT. Effects of 2,3,7,8- Tetrachlorodibenzo- <i>p</i> -dioxin on 17 $\beta$ -Estradiol-Induced Glucose Metabolism in MCF-7 Human Breast Cancer Cells: <sup>13</sup> C Nuclear Magnetic Resonance Spectroscopy Studies .	1029
JOHN M. ZGOMBICK, RICHARD L. WEINSHANK, MARY MACCHI, LEE E. SCHECHTER, THERESA A. BRANCHEK, AND PAUL R. HARTIG. Expression and Pharmacological Characterization of a Canine 5-Hydroxytryptamine <sub>1D</sub> Receptor Subtype .....	1036
AUTHOR INDEX FOR VOLUME 40 .....	1043
SUBJECT INDEX FOR VOLUME 40 .....	1050

---

Copyright © 1991 by The American Society for Pharmacology and Experimental Therapeutics

All Rights Reserved

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

The appearance of the code at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of this article may be made for personal or internal use, or for the personal or internal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per copy fee through the Copyright Clearance Center, Inc. (21 Congress Street, Salem, Massachusetts 01970), for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Copy fees for pre-1986 articles are the same as those shown for current articles.