

## Contents

### ACCELERATED COMMUNICATIONS

- |     |  |  |
|-----|--|--|
| 803 | Sensitivity of the <i>N</i> -Methyl-D-aspartate Receptor to Polyamines Is Controlled by NR2 Subunits                 | Keith Williams, Angelina M. Zappia, Dolan B. Pritchett, Yu Min Shen, and Perry B. Molinoff |
| 810 | Impact of $\beta$ and $\gamma$ Variants on Ligand-Binding Properties of $\gamma$ -Aminobutyric Acid Type A Receptors | Hartmut Lüddens, Peter H. Seeburg, and Esa R. Korpi  |

### ARTICLES

- |     |   |  |
|-----|---|--|
| 815 | Inhibition of NADPH-Oxidase Activity in Human Polymorphonuclear Neutrophils by Lipophilic Ascorbic Acid Derivatives   | E. Schmid, V. Figala, and V. Ullrich   |
| 826 | 5-Hydroxytryptamine Type 2A Receptors Regulate Cyclic AMP Accumulation in a Neuronal Cell Line by Protein Kinase C-Dependent and Calcium/Calmodulin-Dependent Mechanisms                  | Kelly A. Berg, William P. Clarke, Yibang Chen, Barbara J. Ebersole, Ronald D. G. McKay, and Saul Maayani |
| 837 | Reinforcement Effect of Histamine on the Differentiation of Murine Myeloblasts and Promyelocytes: Externalization of Granulocyte Colony-Stimulating Factor Receptors Induced by Histamine | Kenji Tasaka, Masaki Doi, Naoki Nakaya, and Mitsunobu Mio  |
| 846 | Expression of mRNAs Encoding Subunits of the <i>N</i> -Methyl-D-aspartate Receptor in Cultured Cortical Neurons   | Jie Zhong, Shari L. Russell, Dolan B. Pritchett, Perry B. Molinoff, and Keith Williams                   |

*Continued*

---

MOLECULAR PHARMACOLOGY (MOL/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 E. Preston St., Baltimore, MD 21202-3993. Second class postage paid at Baltimore, MD and at additional mailing offices. POSTMASTER: Send address changes to MOLECULAR PHARMACOLOGY, 428 E. Preston St., Baltimore, MD 21202-3993. **Subscription Rates:** U.S.: *Personal* \$105; *Institutional* \$230; *Single copy* \$19. **Outside the U.S., except Japan:** *Personal* \$135; *Institutional* \$260; *Single copy* \$23. Foreign prices exclude Japan. **See Information for Subscribers for detailed instructions.** The GST Tax Number for Canadian subscribers is 123394371. Country of origin USA. PRICES ARE SUBJECT TO CHANGE. Indexed by *Index Medicus*, *Current Contents (Life Sciences)*, *Excerpta Medica*, *Reference Update/Research Information Systems*, and *Current Awareness in Biological Sciences*. Copyright © 1994 by The American Society for Pharmacology and Experimental Therapeutics.

---

# CONTENTS (cont'd)

- |     |   |  |
|-----|---|--|
| 854 | Alternative Splicing of Human Inwardly Rectifying K <sup>+</sup> Channel ROMK1 mRNA   | Hideki Yano, Louis H. Philipson, Jay L. Kugler, Yoshiharu Tokuyama, Elizabeth M. Davis, Michelle M. Le Beau, Deborah J. Nelson, Graeme I. Bell, and Jun Takeda |
| 861 | A Carboxyl-Terminally Truncated Mutant and Nonglycosylated A <sub>2a</sub> Adenosine Receptors Retain Ligand Binding  | Colleen E. Piersen, C. Diane True, and Jack N. Wells   |
| 871 | <sup>125</sup> I-2-[4-[2-[2-[(4-Azidophenyl)methylcarbonyl-amino]ethylaminocarbonyl]ethyl]phenyl]ethyl-amino-5'-N-ethylcarboxamidoadenosine Labels Transmembrane Span V of the A <sub>2a</sub> Adenosine Receptor | Colleen E. Piersen, C. Diane True, and Jack N. Wells   |
| 878 | The D <sub>2S</sub> and D <sub>2L</sub> Dopamine Receptor Isoforms Are Differentially Regulated in Chinese Hamster Ovary Cells  | Li-Juan Zhang, Jean E. Lachowicz, and David R. Sibley  |
| 890 | Transfected Muscarinic Acetylcholine Receptors Selectively Couple to G <sub>i</sub> -Type G Proteins and G <sub>q/11</sub>  | Stefan Offermanns, Thomas Wieland, Doris Homann, Joachim Sandmann, Evelyn Bombien, Karsten Spicher, Günter Schultz, and Karl H. Jakobs                         |
| 899 | Characterization of [ <sup>3</sup> H]Ba 679 BR, a Slowly Dissociating Muscarinic Antagonist, in Human Lung: Radioligand Binding and Autoradiographic Mapping  | El-Bdaoui Haddad, Judith C. W. Mak, and Peter J. Barnes  |
| 908 | Influence of Structural Modifications at the 3' and 4' Positions of Doxorubicin on the Drug Ability to Trap Topoisomerase II and to Overcome Multidrug Resistance   | Giovanni Capranico, Rosanna Supino, Monica Binaschi, Laura Capolongo, Maria Grandi, Antonino Suarato, and Franco Zunino  |
| 916 | Elevation of Glutathione Levels by Phase II Enzyme Inducers: Lack of Inhibition of Human Immunodeficiency Virus Type 1 Replication in Chronically Infected Monocytoid Cells                                       | Hans J. Prochaska, Lewis Robinson, Yong Yeh, Penny Baron, and Bruce Polsky   |
| 922 | Effects of Tyrphostins on the Activated c- <i>src</i> Protein in NIH/3T3 Cells  | Wenceslas K. Agbotounou, Alexander Levitzki, Alain Jacquemin-Sablon, and Josiane Pierre  |
| 932 | Biodistribution and Metabolism of Internally <sup>3</sup> H-Labeled Oligonucleotides. I. Comparison of a Phosphodiester and Phosphorothioate  | Howard Sands, Lorraine J. Gorey-Feret, Anthony J. Cocuzza, Frank W. Hobbs, Dennis Chidester, and George L. Trainor   |
| 944 | Short and Long Term Effects of Cytoskeleton-Disrupting Drugs on P450 <i>Cyp1a-1</i> Induction in Murine Hepatoma 1c1c7 Cells: Suppression by the Microtubule Inhibitor Nocodazole                                 | Alfred Schöller, Nancy J. Hong, Paul Bischer, and John J. Reiners, Jr.   |

*continued*

# CONTENTS (cont'd)

955	Template 2-Chloro-2'-deoxyadenosine Monophosphate Inhibits <i>in Vitro</i> DNA Synthesis	Patricia Hentosh and Paul Grippo
962	Cross-resistance to Antitumor Diarylsulfonylureas and Collateral Sensitivity to Mitochondrial Toxins in a Human Cell Line Selected for Resistance to the Antitumor Agent <i>N</i> -(5-Indanylsulfonyl)- <i>N'</i> -(4-chlorophenyl)urea	Janek Sosinski, Jay H. Thakar, Glen S. Germain, Peter Dias, Franklin C. Harwood, John F. Kuttesch, and Peter J. Houghton
971	Activation of Rat Kupffer Cells to Tumoricidal Cells by the Immunomodulator Muramyl Tripeptide-Phosphatidylethanolamine Incorporated into the Novel Drug Carrier Lactosylated Low Density Lipoprotein	Bob van de Water, Theo J. C. van Berkel, and Johan Kuiper
978	<sup>125</sup> I-4-Aminobenzyl-5'- <i>N</i> -methylcarboxamido-adenosine, a High Affinity Radioligand for the Rat A <sub>3</sub> Adenosine Receptor	Mark E. Olah, Carola Gallo-Rodriguez, Kenneth A. Jacobson, and Gary L. Stiles
983	Role of Acidic Amino Acids in the Allosteric Modulation by Gallamine of Antagonist Binding at the m2 Muscarinic Acetylcholine Receptor	Raymond A. Leppik, Robert C. Miller, Martine Eck, and Jean-Luc Paquet
991	5-Hydroxytryptamine Type 2A and 2C Receptors Linked to Na <sup>+</sup> /K <sup>+</sup> /Cl <sup>-</sup> Cotransport	Steven E. Mayer and Elaine Sanders-Bush
997	Interaction of $\delta$ -Opioid Receptors with Multiple G Proteins: A Non-relationship between Agonist Potency to Inhibit Adenylyl Cyclase and to Activate G Proteins	P. L. Prather, H. H. Loh, and P. Y. Law
1004	Ethanol Inhibits the Function of 5-Hydroxytryptamine Type 1c and Muscarinic M <sub>1</sub> G Protein-Linked Receptors in <i>Xenopus</i> Oocytes Expressing Brain mRNA: Role of Protein Kinase C	Enrico Sanna, J. E. Dildy-Mayfield, and R. Adron Harris
1013	Control of Calcium Spiking Frequency in Pituitary Gonadotrophs by a Single-Pool Cytoplasmic Oscillator	Stanko S. Stojilkovic, Melanija Tomić, Manuel Kukuljan, and Kevin J. Catt
1022	Properties and Regulation of the Coupling to Adenylate Cyclase of Secretin Receptors Stably Transfected in Chinese Hamster Ovary Cells	J. P. Vilardaga, E. Ciccarelli, C. Dubeaux, P. De Neef, A. Bollen, and P. Robberecht
1029	Signal Transduction by the Cloned Glucagon-like Peptide-1 Receptor: Comparison with Signaling by the Endogenous Receptors of $\beta$ Cell Lines	Christian Widmann, Ernst Bürki, Wanda Dolci, and Bernard Thorens
1036	A Single Species of A <sub>1</sub> Adenosine Receptor Expressed in Chinese Hamster Ovary Cells not only Inhibits cAMP Accumulation but also Stimulates Phospholipase C and Arachidonate Release	Mohammed Akbar, Fumikazu Okajima, Hideaki Tomura, Satoshi Shimegi, and Yoichi Kondo
1043	Protein Kinase C-Dependent Regulation of Sulfidopeptide Leukotriene Biosynthesis and Leukotriene C <sub>4</sub> Synthase in Neutrophilic HL-60 Cells	Stacia Kargman, Ambereen Ali, John P. Vaillancourt, Jilly F. Evans, and Donald W. Nicholson

continued

***CONTENTS (cont'd)***

- |      |   |  |
|------|---|--|
| 1050 | <b>Intracellular Sodium Concentration in Cultured Cerebellar Granule Cells Challenged with Glutamate</b>          | <b>Lech Kiedrowski,<br/>Jarda T. Wroblewski, and<br/>Erminio Costa</b>         |
| 1055 | <b>Block of the Rat Brain IIA Sodium Channel <math>\alpha</math> Subunit by the Neuroprotective Drug Riluzole</b> | <b>Terence Hebert, Pierre Drapeau,<br/>Laurent Pradier, and Robert J. Dunn</b> |