

MOLECULAR PHARMACOLOGY

May 2007

Volume 71

Number 5




<http://molpharm.aspetjournals.org>

ISSN 0026-895X

MINIREVIEW

- Vitamin E Analogs, a Novel Group of "Mitocans," as Anticancer Agents: The Importance of Being Redox-Silent
Jiri Neuzil, Marco Tomasetti, Yan Zhao, Lan-Feng Dong, Marc Birringer, Xiu-Fang Wang, Pauline Low, Kun Wu, Brian A. Salvatore, and Steven J. Ralph 1185


PERSPECTIVES

- Missing Links: Mechanisms of Protean Agonism 
Richard R. Neubig 1200
- The Thrill Can Kill: Murder by Methylation 
Sailen Barik 1203
- All Aglow about Presynaptic Receptor Regulation of Neurotransmitter Transporters 
Randy D. Blakely and Louis J. DeFelice 1206

ACCELERATED COMMUNICATIONS

- Activation of TRPA1 Channels by the Fatty Acid Amide Hydrolase Inhibitor 3'-Carbamoylbiphenyl-3-yl cyclohexylcarbamate (URB597)
Wende Niforatos, Xu-Feng Zhang, Marc R. Lake, Karl A. Walter, Torben Neelands, Thomas F. Holzman, Victoria E. Scott, Connie R. Faltynek, Robert B. Moreland, and Jun Chen 1209
- Extracellular Signal-Regulated Kinase Is an Endogenous Signal Retaining the Nuclear Constitutive Active/Androstane Receptor (CAR) in the Cytoplasm of Mouse Primary Hepatocytes
Chika Koike, Rick Moore, and Masahiko Negishi 1217

ARTICLES

-  D₂ Receptors Regulate Dopamine Transporter Function via an Extracellular Signal-Regulated Kinases 1 and 2-Dependent and Phosphoinositide 3 Kinase-Independent Mechanism
Elizabeth A. Bolan, Bronwyn Kivell, Vanaja Jaligam, Murat Oz, Lankupalle D. Jayanthi, Yang Han, Namita Sen, Eneki Urizar, Ivone Gomes, Lakshmi A. Devi, Sammanda Ramamoorthy, Jonathan A. Javitch, Agustin Zapata, and Toni S. Shippenberg 1222

The , , and  symbols in the table of contents identify articles discussed in the *Perspectives*.

Molecular Pharmacology (ISSN 0026-895X) is published monthly (two volumes per year beginning in January and July) by the American Society for Pharmacology and Experimental Therapeutics, 9650 Rockville Pike, Bethesda, MD 20814-3995; e-mail: info@aspet.org; Web site: <http://www.aspet.org>. Periodicals postage paid at Bethesda, MD and at additional mailing offices. POSTMASTER: Send address changes to *Molecular Pharmacology*, 9650 Rockville Pike, Bethesda, MD 20814-3995. Subscription Rates: U.S.: \$616.00 for institutions and \$251.00 for non-ASPET members. Outside the U.S.: \$699.00 for institutions and \$334.00 for non-ASPET members. Single copy:

\$62.00. GST Tax Number for Canadian subscribers: BN:13489 2330 RT. Indexed or abstracted by *Biochemistry & Biophysics Citation Index*[®], *Biological Abstracts*, *BIOSIS Previews Database*, *Current Awareness in Biological Sciences*, *Current Contents*[®]/*Life Sciences*, *EMBASE/Excerpta Medica*, *Index Medicus*, *Medical Documentation Service*[®], *Reference Update*[®], *Research Alert*[®], *Science Citation Index*[®], *SciSearch*[®], and *SIIC Data Bases*. Copyright © 2007 by the American Society for Pharmacology and Experimental Therapeutics. All rights reserved. Printed in the U.S.A.

Reversal of Stathmin-Mediated Resistance to Paclitaxel and Vinblastine in Human Breast Carcinoma Cells <i>Elizabeth Alli, Jin-Ming Yang, James M. Ford, and William N. Hait</i>	1233
Solute-Inhibitor Interactions in the Plasmodial Surface Anion Channel Reveal Complexities in the Transport Process <i>Godfrey Lisk, Seth Scott, Tsione Solomon, Ajay D. Pillai, and Sanjay A. Desai</i>	1241
A Widely Used Retinoic Acid Receptor Antagonist Induces Peroxisome Proliferator-Activated Receptor- γ Activity <i>Michael Schupp, Joshua C. Curtin, Roy J. Kim, Andrew N. Billin, and Mitchell A. Lazar</i>	1251
☐ Synergistic Neuroprotection by Bis(7)-tacrine via Concurrent Blockade of <i>N</i> -Methyl-D-aspartate Receptors and Neuronal Nitric-Oxide Synthase <i>Wenming Li, Jian Xue, Chunying Niu, Hongjun Fu, Colin S. C. Lam, Jialie Luo, Hugh H. N. Chan, Huaiguo Xue, Kelvin K. W. Kan, Nelson T. K. Lee, Chaoying Li, Yuanping Pang, Mingtao Li, Karl W. K. Tsim, Hualiang Jiang, Kaixian Chen, Xiaoyuan Li, and Yifan Han</i>	1258
Domains Necessary for $G\alpha_{12}$ Binding and Stimulation of Protein Phosphatase-2A (PP2A): Is $G\alpha_{12}$ a Novel Regulatory Subunit of PP2A? <i>Deguang Zhu, Robert I. Tate, Ralf Ruediger, Thomas E. Meigs, and Bradley M. Denker</i>	1268
Insulin Increases the Potency of Glycine at Ionotropic Glycine Receptors <i>Valerie B. Caraiscos, Robert P. Bonin, J. Glen Newell, Elzbieta Czerwinska, John F. Macdonald, and Beverley A. Orser</i>	1277
Analogs of Methyllycaconitine as Novel Noncompetitive Inhibitors of Nicotinic Receptors: Pharmacological Characterization, Computational Modeling, and Pharmacophore Development <i>Dennis B. McKay, Cheng Chang, Tatiana F. González-Cestari, Susan B. McKay, Raed A. El-Hajj, Darrell L. Bryant, Michael X. Zhu, Peter W. Swaan, Kristjan M. Arason, Aravinda B. Pulipaka, Crina M. Orac, and Stephen C. Bergmeier</i>	1288
Vitamin D ₃ Derivatives with Adamantane or Lactone Ring Side Chains are Cell Type-Selective Vitamin D Receptor Modulators <i>Yuka Inaba, Keiko Yamamoto, Nobuko Yoshimoto, Manabu Matsunawa, Shigeyuki Uno, Sachiko Yamada, and Makoto Makishima</i>	1298
Agonist-Driven Conformational Changes in the Inner β -Sheet of $\alpha 7$ Nicotinic Receptors <i>James T. McLaughlin, Jie Fu, and Robert L. Rosenberg</i>	1312
◇ Maternal Cocaine Administration Causes an Epigenetic Modification of Protein Kinase C ϵ Gene Expression in Fetal Rat Heart <i>Haitao Zhang, Agus Darwanto, Thomas A. Linkhart, Lawrence C. Sowers, and Lubo Zhang</i>	1319
Real-Time Analysis of Agonist-Induced Activation of Protease-Activated Receptor 1/ $G\alpha_{i1}$ Protein Complex Measured by Bioluminescence Resonance Energy Transfer in Living Cells <i>Mohammed A. Ayoub, Damien Maurel, Virginie Binet, Michel Fink, Laurent Prézeau, Hervé Ansanay, and Jean-Philippe Pin</i>	1329
Conformationally Sensitive Reactivity to Permeant Sulfhydryl Reagents of Cysteine Residues Engineered into Helical Hairpin 1 of the Glutamate Transporter GLT-1 <i>Irina Shlaifer and Baruch I. Kanner</i>	1341
☐ Protean Agonism at the Dopamine D ₂ Receptor: (<i>S</i>)-3-(3-Hydroxyphenyl)- <i>N</i> -propylpiperidine Is an Agonist for Activation of G_{o1} but an Antagonist/Inverse Agonist for G_{i1} , G_{i2} , and G_{i3} <i>J. Robert Lane, Ben Powney, Alan Wise, Steven Rees, and Graeme Milligan</i>	1349
Identification of a Second Blocker Binding Site at the Cytoplasmic Mouth of the Cystic Fibrosis Transmembrane Conductance Regulator Chloride Channel Pore <i>Chantal N. St. Aubin, Jing-Jun Zhou, and Paul Linsdell</i>	1360

- Molecular Signalling Mediating the Protective Effect of A₁ Adenosine and mGlu3 Metabotropic Glutamate Receptor Activation against Apoptosis by Oxygen/Glucose Deprivation in Cultured Astrocytes
Renata Ciccarelli, Iolanda D'Alimonte, Patrizia Ballerini, Mariagrazia D'Auro, Eleonora Nargi, Silvana Buccella, Patrizia Di Iorio, Valeria Bruno, Ferdinando Nicoletti, and Francesco Caciagli 1369
- ▣ A Critical Role of Luteolin-Induced Reactive Oxygen Species in Blockage of Tumor Necrosis Factor-Activated Nuclear Factor- κ B Pathway and Sensitization of Apoptosis in Lung Cancer Cells
Wei Ju, Xia Wang, Honglian Shi, Wenshu Chen, Steven A. Belinsky, and Yong Lin 1381
- Interaction of Novel Positive Allosteric Modulators of Metabotropic Glutamate Receptor 5 with the Negative Allosteric Antagonist Site Is Required for Potentiation of Receptor Responses
Yelin Chen, Yi Nong, Cyril Goudet, Kamondanai Hemstapat, Tomas de Paulis, Jean-Philippe Pin, and P. Jeffrey Conn 1389
- PAR1, but Not PAR4, Activates Human Platelets through a G_{i/o}/Phosphoinositide-3 Kinase Signaling Axis
Bryan Voss, Joseph N. McLaughlin, Michael Holinstat, Roy Zent, and Heidi E. Hamm 1399
- Activation of Single Nicotinic Receptor Channels from *Caenorhabditis elegans* Muscle
Diego Rayes, Marina Flamini, Guillermina Hernando, and Cecilia Bouzat 1407
- Quantitative Evaluation of Human δ Opioid Receptor Desensitization Using the Operational Model of Drug Action
Edita Navratilova, Sue Waite, Dagmar Stropova, Miriam C. Eaton, Isabel D. Alves, Victor J. Hruby, William R. Roeske, Henry I. Yamamura, and Eva V. Varga 1416
- Post-Transcriptional Regulation of Human Inducible Nitric-Oxide Synthase Expression by the Jun N-terminal Kinase
Riku Korhonen, Katrin Linker, Andrea Pautz, Ulrich Förstermann, Eeva Moilanen, and Hartmut Kleinert 1427
- Antiproliferative Mechanisms of a Transcription Factor Decoy Targeting Signal Transducer and Activator of Transcription (STAT) 3: The Role of STAT1
Vivian Wai Yan Lui, Amanda L. Boehm, Priya Koppikar, Rebecca J. Leeman, Daniel Johnson, Michelene Ogagan, Erin Childs, Maria Freilino, and Jennifer Rubin Grandis 1435
- Correction to “A Pair-Feeding Study Reveals That a Y5 Antagonist Causes Weight Loss in Diet-Induced Obese Mice by Modulating Food Intake and Energy Expenditure” 1444

▣ Supplemental material is available online at <http://molpharm.aspetjournals.org>.

About the cover: Overall alignment of all 67 compounds used in generating 3D-QSAR models. See the article by McKay et al. on page 1288 of this issue.