

# PHARMACOLOGICAL REVIEWS

A Publication of the American Society for Pharmacology and Experimental Therapeutics

July 2012

Volume 64, Number 3

## IUPHAR Nomenclature Report

- International Union of Basic and Clinical Pharmacology. LXXXVI. Orexin Receptor Function, Nomenclature and Pharmacology 389  
*Anthony L. Gotter, Andrea L. Webber, Paul J. Coleman, John J. Renger, and Christopher J. Winrow*

## Review Articles

- Organic Anion Transporters and Their Implications in Pharmacotherapy 421  
*Arian Emami Riedmaier, Anne T. Nies, Elke Schaeffeler, and Matthias Schwab*
- Pharmacology and Therapeutics of Bronchodilators 450  
*Mario Cazzola, Clive P. Page, Luigino Calzetta, and M. Gabriella Matera*
- Physical and Chemical Strategies for Therapeutic Delivery by Using Polymeric Nanoparticles 505  
*José M. Morachis, Enas A. Mahmoud, and Adah Almutairi*
- Aldehyde Dehydrogenase Inhibitors: a Comprehensive Review of the Pharmacology, Mechanism of Action, Substrate Specificity, and Clinical Application 520  
*Vindhya Koppaka, David C. Thompson, Ying Chen, Manuel Ellermann, Kyriacos C. Nicolaou, Risto O. Juvonen, Dennis Petersen, Richard A. Deitrich, Thomas D. Hurley, and Vasilis Vasiliou*
- Molecular Mechanisms Regulating the Vascular Prostacyclin Pathways and Their Adaptation during Pregnancy and in the Newborn 540  
*Batoule H. Majed and Raouf A. Khalil*
- The Pharmacological Treatment of Pulmonary Arterial Hypertension 583  
*Lyn R. Frumkin*
- Pharmacology for the Treatment of Premature Ejaculation 621  
*François Giuliano and Pierre Clément*
- G-Protein-Coupled Receptors in Adult Neurogenesis 645  
*Van A. Doze and Dianne M. Perez*
- Classification, Functions, and Clinical Relevance of Extracellular Vesicles 676  
*Edwin van der Pol, Anita N. Böing, Paul Harrison, Auguste Sturk, and Rienk Nieuwland*
- Cisplatin Resistance: A Cellular Self-Defense Mechanism Resulting from Multiple Epigenetic and Genetic Changes 706  
*Ding-Wu Shen, Lynn M. Pouliot, Matthew D. Hall, and Michael M. Gottesman*
- Human Experimental Pain Models for Assessing the Therapeutic Efficacy of Analgesic Drugs 722  
*Anne Estrup Olesen, Trine Andresen, Camilla Staahl, and Asbjørn Mohr Drewes*
- Thinking Outside the Cleft to Understand Synaptic Activity: Contribution of the Cystine-Glutamate Antiporter (System  $x_c^-$ ) to Normal and Pathological Glutamatergic Signaling 780  
*Richard Bridges, Victoria Lutgen, Doug Lobner, and David A. Baker*
- The Dual Role of Pharmacogenetics in HIV Treatment: Mutations and Polymorphisms Regulating Antiretroviral Drug Resistance and Disposition 803  
*Veronique Michaud, Tamara Bar-Magen, Jacques Turgeon, David Flockhart, Zeruesenay Desta, and Mark A. Wainberg*

*About the cover:* Types of therapeutic payloads that can be encapsulated into polymeric nanoparticles. See the article by Morachis et al. on page 505 of this issue.