PHARMACOLOGICAL REVIEWS
A Publication of the American Society for Pharmacology and Experimental Therapeutics

January 2022 Volume 74, Number 1

Editorial
A Commitment to Excellence from the New Editor
Lynette C. Daws 311

Review Articles
Targeting Systemic Innate Immune Cells as a Therapeutic Avenue for Alzheimer Disease
Vincent Pons and Serge Rivest 1

The Yin and Yang of ERBB4: Tumor Suppressor and Oncoprotein

Inhaled Medicines: Past, Present, and Future
Sandra Anderson, Paul Atkins, Per Bäckman, David Cipolla, Andrew Clark, Evangelia Daviskas, Bernd Disse, Plamena Entcheva-Dimitrov, Rick Fuller, Igor Gonda, Hans Lundbäck, Bo Olsson, and Jeffry Weers 48

Sex Differences in Opioid and Psychostimulant Craving and Relapse: A Critical Review
Céline Nicolas, Natalie E. Zlebnik, Mehdi Farokhnia, Lorenzo Leggio, Satoshi Ikemoto, and Yavin Shaham 119

Organotypic and Microphysiological Human Tissue Models for Drug Discovery and Development—Current State-of-the-Art and Future Perspectives
Sonia Youhanna, Aurino M. Kemas, Lena Preiss, Yitian Zhou, Joanne X. Shen, Selgin D. Cakal, Francesco S. Paqualini, Sran K. Goparaju, Reza Zandi Shafagh, Johan Ulrik Lind, Carl M. Sellgren, and Volker M. Lanachke 141

Therapeutics in the Pipeline Targeting α-Synuclein for Parkinson’s Disease
Hilary Grosso Jasutkar, Stephanie E. Oh, and M. Maral Mouradian 207

α6-Containing GABA<sub>A</sub> Receptors: Functional Roles and Therapeutic Potentials
Werner Sieghart, Lih-Chu Chiou, Margot Ernst, Jure Fabjan, Miroslav M. Savić, and Ming Tatt Lee 238

Neurobiological Mechanisms of Nicotine Reward and Aversion
Lauren Wills, Jessica L. Ables, Kevin M. Brainscheidel, Stephanie P. B. Caligiuri, Karim S. Elayoubi, Clementine Fillinger, Masago Ishikawa, Janna K. Moen, and Paul J. Kenny 271

Immunology and Technology of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Vaccines
Simone Pecetta, Sven Kratochvil, Yu Kato, Kumaran Vadivelu, and Rino Rappuoli 313

Supplemental material is available online at http://pharmrev.aspetjournals.org.

About the cover: Overview of models of the human nephron. See the article by Youhanna et al. (dx.doi.org/10.1124/pharmrev.120.000238).