

REVIEWS IN THE NEUROSCIENCES

EDITOR-IN-CHIEF

Joseph P. Huston, Düsseldorf

ASSOCIATE EDITOR

Bianca Topic, Düsseldorf

EDITORIAL BOARD

Hojjat Adeli, Columbus, OH

Gyorgy Buzsaki, Newark, NJ

Jacqueline N. Crawley, Bethesda, MD

Tim J. Crow, Headington

Howard B. Eichenbaum, Boston, MA

Paul E. Gold, Champaign, IL

Florian Holsboer, Munich

Carsten Korth, Düsseldorf

Gert Lubec, Vienna

Bruce S. McEwen, New York, NY

Weihong Pan, Baton Rouge, LA

Mikhail V. Pletnikov, Baltimore, MD

Trevor W. Robbins, Cambridge

Alfons Schnitzler, Düsseldorf

Charles F. Stevens, La Jolla, CA

Oswald Steward, Irvine, CA

John Q. Trojanowski, Philadelphia, PA

ABSTRACTED/INDEXED IN BIOSIS, EMBASE, Index Medicus, Neuroscience Citation Index, PsycINFO, Reference Update, Research Alert

The publisher, together with the authors and editors, has taken great pains to ensure that all information presented in this work (programs, applications, amounts, dosages, etc.) reflects the standard of knowledge at the time of publication. Despite careful manuscript preparation and proof correction, errors can nevertheless occur. Authors, editors and publisher disclaim all responsibility for any errors or omissions of liability for the results obtained from use of the information, or parts thereof, contained in this work.

The citation of registered names, trade names, trademarks, etc. in this work does not imply, even in the absence of a specific statement, that such names are exempt from laws and regulations protecting trademarks etc. and therefore free for general use.

ISSN 0334-1763 · e-ISSN 1607-8470

All information regarding notes for contributors, subscriptions, Open access, back volumes and orders is available online at www.degruyter.com/revneuro

RESPONSIBLE EDITORS Dr. Joseph P. Huston, Center for Behavioral Neuroscience, University of Düsseldorf, Universitätsstraße 1, 40225 Düsseldorf, Germany, Email: jph@uni.duesseldorf.de

JOURNAL MANAGER Dr. Torsten Krüger, De Gruyter, Genthiner Straße 13, 10785 Berlin, Germany, Tel.: +49 (0)30 260 05 – 176, Fax: +49 (0)30 260 05 – 298, Email: rev.neurosci.editorial@degruyter.com

RESPONSIBLE FOR ADVERTISEMENTS Panagiota Herbrand, De Gruyter, Mies-van-der-Rohe-Straße 1, 80807 München, Germany, Tel.: +49 (0)89 769 02 – 394, Fax: +49 (0)89 769 02 – 350, Email: panagiota.herbrand@degruyter.com

© 2012 Walter de Gruyter GmbH & Co. KG, Berlin/Boston

TYPESETTING Compuscript Ltd., Shannon, Ireland

PRINTING Franz X. Stückle Druck und Verlag e.K., Ettenheim
Printed in Germany

COVER ILLUSTRATION Hemera / Thinkstock



CONTENTS

REVIEWS IN THE NEUROSCIENCES

2012 · VOLUME 23 · NUMBER 2

The role of androgens in regulating emotional state and aggressive behavior

Konstantin Chichinadze, Nodar Chichinadze, Ledi Gachechiladze and Ann Lazarashvili

123

Role of stem cells in the regeneration and repair of peripheral nerves

Zhiwu Ren, Yu Wang, Jiang Peng, Qing Zhao and Shibi Lu

135

Interferon regulatory factor 1 regulation of oligodendrocyte injury and inflammatory demyelination

Eileah Loda and Roumen Balabanov

145

Phosphoinositide 3-kinase enhancer (PIKE) in the brain: is it simply a phosphoinositide 3-kinase/Akt enhancer?

Chi Bun Chan and Keqiang Ye

153

Glial hemichannels and their involvement in aging and neurodegenerative diseases

Juan A. Orellana, Rommy von Bernhardt, Christian Giaume and Juan C. Sáez

163

Diversity of presynaptic calcium channels displaying different synaptic properties

Marcel A. Kamp, Daniel Hänggi, Hans-Jakob Steiger and Toni Schneider

179

α -Synuclein phosphorylation as a therapeutic target in Parkinson's disease

Steven P. Braithwaite, Jeffry B. Stock and M. Maral Mouradian

191

A historical justification for and retrospective analysis of the systematic application of light therapy in Parkinson's disease

Gregory L. Willis, Cleo Moore and Stuart M. Armstrong

199