

BIOMOLECULAR CONCEPTS

EXECUTIVE EDITOR-IN-CHIEF
Pierre Jolles, Paris, France

EDITOR-IN-CHIEF
Isabelle Mansuy, Zurich, Switzerland

EDITORIAL BOARD

Jesús Avila, Madrid, Spain
Mathieu Bollen, Leuven, Belgium
Valentina Bonetto, Milan, Italy
Enrico Di Cera, St Louis, USA
Hans Jörnvall, Stockholm, Sweden
Eric Jorgensen, Salt Lake City, USA
Eric Lagasse, Pittsburgh, USA
Robert I. Norman, Leicester, United Kingdom
Lorenzo A. Pinna, Padua, Italy
K. Vijay Raghavan, Bangalore, India
Pál Venetianer, Szeged, Hungary
Walter Wahli, Lausanne, Switzerland

DE GRUYTER

ABSTRACTED/INDEXED IN Chemical Abstracts and the CAS databases; EBSCO - Academic Search; Scopus.

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 or 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 1868-5021 · e-ISSN 1868-503X · CODEN BCIOB8

All information regarding notes for contributors, subscriptions, Open access, back volumes and orders is available online at <http://www.degruyter.com/biomolcon>.

RESPONSIBLE EDITORS Professor Dr. Pierre Jolles, Museum National d'Histoire Naturelle, MCAM, CP54, 63, rue Buffon, F-75005 Paris, France, Email: Pierre.jolles@wanadoo.fr; jolles.pierre@bluewin.ch
Professor Dr. Isabelle Mansuy, Brain Research Institute, University of Zürich, Swiss Federal Institute of Technology Zürich, Winterthurerstrasse 190, CH-8057 Zürich, Switzerland, Email: mansuy@hifo.uzh.ch

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: biomol.concepts.editorial@degruyter.com

RESPONSIBLE FOR ADVERTISEMENTS Panagiota Herbrand, De Gruyter, Rosenheimer Straße 143, 81671 München, Germany, Tel.: +49 (0)89 769 02 - 394, Fax: +49 (0)89 769 02 - 350, Email: panagiota.herbrand@degruyter.com

© 2014 Walter de Gruyter GmbH, Berlin/Boston

TYPESETTING Compuscript Ltd., Shannon, Ireland

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



Offenlegung der Inhaber und Beteiligungsverhältnisse gem. § 7a Abs. 1 Ziff. 1, Abs. 2 Ziff. 3 des Berliner Pressegesetzes: Die Gesellschafter der Walter de Gruyter GmbH sind: Cram, Gisela, Rentnerin, Berlin; Cram, Elsbeth, Pensionärin, Rosengarten-Alvesen; Cram, Margret, Studienrätin i.R., Berlin; Cram, Dr. Georg-Martin, Unternehmens-Systemberater, Stadtbergen; Cram, Maike, Berlin; Cram, Jens, Mannheim; Cram, Ingrid, Betriebsleiterin, Tuxpan / Michoacan (Mexiko); Cram, Sabina, Mexico, DF (Mexiko); Cram, Silke, Wissenschaftlerin, Mexico DF (Mexiko); Cram, Björn, Aachen; Cram, Ella Anita, Rentnerin, Berlin; Cram, Berit, Greifswald; Cram-Gomez, Susanne, Mexico DF (Mexiko); Cram-Heydrich, Walter, Mexico DF (Mexico); Duvenbeck, Brigitta, Oberstudienrätin i.R., Bad Homburg; Fund, Dr. Sven, geschäftsführender Gesellschafter, Berlin; Gädeke, Gudula, M.A., Atemtherapeutin/Lehrerin, Tübingen; Gädeke, Martin, Einzelunternehmer, Würzburg; Lubasch, Dr. Annette, Ärztin, Berlin; Schütz, Dr. Christa, Ärztin, Mannheim; Schütz, Sonja, Berlin; Schütz, Juliane, Berlin; Schütz, Antje, Berlin; Schütz, Valentin, Berlin; Seils, Dorothee, Apothekerin, Stuttgart; Seils, Gabriele, Journalistin, Berlin; Seils, Dr. Clara-Eugenie, Oberstudienrätin i.R., Reppenstedt; Seils, Christoph, Journalist, Berlin; Siebert, John-Walter, Pfarrer, Oberstenfeld; Walter de Gruyter Stiftung, Berlin.

Contents

Reviews

Neil A. Youngson, Pin-Chun Lin and Shih-Shun Lin
The convergence of autophagy, small RNA and the stress response – implications for transgenerational epigenetic inheritance in plants — 1

Michael Mendoza, Garni Mandani and Jamil Momand
The *MDM2* gene family — 9

Subrata Batabyal, Susobhan Choudhury, Dilip Sao,
Tanumoy Mondol and Samir Kumar Pal
Dynamical perspective of protein-DNA interaction — 21

Marta Vieira and Maria João Saraiva
Transthyretin: a multifaceted protein — 45

Constanze Pinske and R. Gary Sawers

The importance of iron in the biosynthesis and assembly of [NiFe]-hydrogenases — 55

Nuno D. Pires
Seed evolution: parental conflicts in a multi-generational household — 71

Short Conceptual Overview

Blaine Bisel, Francesco S. Pavone and Martino Calamai
GM1 and GM2 gangliosides: recent developments — 87

