

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, 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

© 2013 Walter de Gruyter GmbH, Berlin/Boston

TYPESETTING Compuscript Ltd., Shannon, Ireland

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

COVER ILLUSTRATION

Aging is characterised by the fragmentation of fibrous elastin into peptides. Several of these elastin peptides can promote biological activities, while others can form amyloid-like fibres as demonstrated by the transmission electron microscopic image on the front cover (colourised representation). For a discussion of the role played by these peptides in ageing and their contribution to tissue homeostasis and the development of several pathologies see the review article by Baud et al. on pp. 65–76 in this issue. Image reproduced with permission of John Wiley & Sons from Bochicchio and Pepe (2011), *Chirality* 23, pp. 694–702.



Contents

Reviews

Jamie M. Kramer

Epigenetic regulation of memory: implications in human cognitive disorders — 1

Luisa Di Stefano and Nicholas J. Dyson

The emerging roles for histone demethylases in the modulation of signaling pathways — 13

Georgina MacKenzie and Jamie Maguire

Neurosteroids and GABAergic signaling in health and disease — 29

Thierry Vasselon, Manuella Bouttier, Anne Saumet and Charles-Henri Lecellier

RNAi and retroviruses: are they in RISC? — 43

Alexandra Montagner and Walter Wahli

Contributions of peroxisome proliferator-activated receptor β/δ to skin health and disease — 53

Stéphanie Baud, Laurent Duca, Brigida Bochicchio, Bertrand Brassart, Nicolas Belloy, Antonietta Pepe, Manuel Dauchez, Laurent Martiny and Laurent Debelle
Elastin peptides in aging and pathological conditions — 65

Guido Crisponi, Daniela Fanni, Clara Gerosa, Sonia Nemolato, Valeria M. Nurchi, Miriam Crespo-Alonso, Joanna I. Lachowicz and Gavino Faa
The meaning of aluminium exposure on human health and aluminium-related diseases — 77

Short Conceptual Overview

Thomas Fath

Tropomodulins and tropomyosins – organizers of cellular microcompartments — 89

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