EUROPEAN JOURNAL OF NANOMEDICINE

EDITORS-IN-CHIEF
Patrick Hunziker, University Hospital Basel, Switzerland
Jan Mollenhauer, University of Southern Denmark, Odense, Denmark

SCIENTIFIC MANAGING EDITOR
Georgette B. Salieb-Beugelaar, University Hospital Basel, Switzerland

MANAGING EDITOR CLINAM
Beat Löfler, European Foundation for Clinical Nanomedicine, Basel, Switzerland

EDITORS
Christoph Alexiou, University Hospital Erlangen, Germany
Yechezkel Barenholz, The Hebrew University of Jerusalem, Israel
Kenneth Dawson, University College Dublin, Ireland
Rutledge Ellis-Behnke, Massachusetts Institute of Technology, Cambridge, Massachusetts, USA
Bengt Fadeel, Karolinska Institute, Stockholm, Sweden
Silke Krol, Neurological Institute Foundation Carlo Besta, Milan, Italy
Dong Soo Lee, Seoul National University, Seoul, South Korea
Claus-Michael Lehr, Saarland University, Saarbrücken, Germany
Eder Lilia Romero, Quilmes National University, Bernal, Buenos Aires, Argentina
Simó Schwartz, Vall d’Hebron University Hospital, Barcelona, Spain
Janos Szebeni, Semmelweis University, Budapest, Hungary

EDITORIAL BOARD
Ghaleb Husseini, American University of Sharjah, Sharjah, United Arab Emirates
Harald Mangge, Medical University of Graz, Graz, Austria
Bert Müller, University of Basel, Switzerland
Dan Peer, Tel Aviv University, Tel-Aviv, Israel
Giacinto Scoles, Princeton University, Princeton, New Jersey, USA
Patrick W. Serruys, Erasmus University Medical Center, Rotterdam, The Netherlands

EDITORIAL ADVISOR
Lajos Balogh, AA Nanomedicine & Nanotechnology Consultants, Boston, Massachusetts, USA

DE GRUYTER
published in cooperation with CLINAM – European Foundation for Clinical Nanomedicine
EJNM places emphasis on the clinical application of nanoscience tools, methods and materials and the diverse implications of Nanomedicine. It aims to benefit patients by publishing clinically focused research.

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 1662-5986 ∙ e-ISSN 1662-596X

All information regarding notes for contributors, subscriptions, open access, back volumes and orders is available online at www.degruyter.com/view/j/ejnm

RESPONSIBLE EDITORS Prof. Dr. med. Patrick Hunziker, University Hospital Basel and European Foundation for Clinical Nanomedicine - CLINAM, Basel, CH, Email: hunziker@clinam.org
Prof. Dr. Jan Mollenhauer, Head Molecular Oncology and Director Lundbeckfonden Center of Excellence NanoCAN, IMM - Institute for Molecular Medicine, University of Southern Denmark, Odense, Denmark, Email: jmollenhauer@health.sdu.dk
Dr. med. h.c. Beat Löffler, CEO of the European Foundation for Clinical Nanomedicine - CLINAM, Basel, CH, Email: loeffler@clinam.org

SCIENTIFIC MANAGING EDITOR Dr. Ing. Georgette B. Salieb-Beugelaar, University Hospital Basel, CH, Email: beugelaar@swissnano.org

JOURNAL MANAGER Alexandra Hinz, De Gruyter, Genthiner Straße 13, 10785 Berlin, Germany, Tel.: +49 (0)30 26005-358, Fax: +49 (0)30 26005-184, Email: Editorial.Nanomedicine@degruyter.com

RESPONSIBLE FOR ADVERTISEMENTS Claudia Neumann, De Gruyter, Genthiner Straße 13, 10785 Berlin, Germany, Tel.: +49 (0)30 260 05-226, Fax: +49 (0)30 260 05-325, Email: anzeigen@degruyter.com

© 2016 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 The cover image shows the structure of a YAG crystal and belongs to the manuscript of Bakhmetyev et al. dealing with the synthesis and surface characterization of nanosized Y_2O_3 : Eu and YAG : Eu luminescent phosphors to be used for the photodynamic therapy of cancer. To learn more about this topic please see their contribution on pages 173–184 in this issue. Copyright by Vadim V. Bakhmetyev, Saint-Petersburg State Institute of Technology, Saint-Petersburg, Russia.
Contents

Special Section: Nanomaterials for Medicine: Benefits and Risks

Guest Editorial
Liudmyla Rieznichenko
Nanomaterials for medicine: benefits and risks —— 171

Original Articles
Vadim V. Bakhmetyev, Tamara S. Minakova, Sergey V. Mjakin, Lev A. Lebedev, Anna B. Vlasenko, Anna A. Nikandrova, Irina A. Ekimova, Nina S. Eremina, Maxim M. Sychov and Armelle Ringuede
Synthesis and surface characterization of nanosized Y₂O₃ : Eu and YAG : Eu luminescent phophors useful in photodynamic therapy of cancer —— 173

Yurii Krutyakov, Alexey Klimov, Boris Violin, Vladimir Kuzmin, Victoria Ryzhikh, Alexander Gusev, Olga Zakharova and George Lisichkin

Kseniya V. Mishchenko, Diana K. Avdeeva, Yurii M. Yukhin, Alexander I. Titkov and Olga A. Logutenko
Preparation of electroconductive aluminum-silicon oxide ceramic sensors modified with silver and bismuth nanoparticles —— 195

Diana Abzhanova, Anna Godymchuk, Alexander Gusev and Denis Kuznetsov
Exposure of nano- and ultrafine Ni particles to synthetic biological solutions: predicting fate-related dissolution and accumulation —— 203

Regular contributions

Original Article
Elena A. Shlyapnikova, Igor L. Kanev, Nadezhda N. Novikova, Elena G. Litvinova, Yuri M. Shlyapnikov and Victor N. Morozov
Exposure to bleomycin nanoaerosol does not induce fibrosis in mice —— 213

Short Communications
Mohammad-Reza Nejadmoghaddam, Abdolreza Babamahmoodi, Arash Minai-Tehrani, Amir-Hassan Zarnani and Rassoul Dinarvand
The use of objective oriented project planning tools for nanosafety and health concerns: a case study in nanomedicine research project —— 225

Anupam Roy, Shanker L. Shrivastava, Suman Saha, Subhasish Khamrai, Malabendu Jana and Santi M. Mandal
Crede’s method in eye water finds a nanomedicine base: a potential candidate to control ophthalmia neonatorum —— 233