

CONTENTS

Cited in: BIOSIS/Biological Abstracts; CAB Abstracts; Chemical Abstracts Services; Current Contents (Life Sciences); EMBASE/Excerpta Medica; International Pharmaceutical Abstracts; PUBMED/MEDLINE/Index Medicus; Polymer Contents; Science Citation Index. Also covered in the abstract and citation database Scopus®. Full text available in ScienceDirect®

COVER STORY

277–277

New biomedical polymer targeting E-selectin to reduce atherosclerosis

Kinam Park

Purdue University Biomedical Engineering and Pharmaceutics West Lafayette, IN 47907, USA

REVIEWS

62–83

Cancer stem cells-emanated therapy resistance: Implications for liposomal drug delivery systems

Hassan Dianat-Moghadam^{a,b,c,d}, Maryam Heydarifard^e, Rana Jahanban-Esfahlan^a, Yunes Panahi^d, Hamed Hamishehkar^c, Farhad Pouremamali^a, Reza Rahbarghazi^{b,f}, Mohammad Nouri^{b,a}

^aDepartment of Medical Biotechnology, Faculty of Advanced Medical Sciences, Tabriz University of Medical Sciences, Tabriz, Iran

^bStem Cell Research Center, Tabriz University of Medical Sciences, Tabriz, Iran

^cDrug Applied Research Center, Tabriz University of Medical Sciences, Tabriz, Iran

^dChemical Injuries Research Center, Faculty of Pharmacy, Baqiyatallah University of Medical Sciences, Tehran, Iran

^eDepartment of Chemical Engineering, Islamic Azad University Tabriz Branch, Tabriz, Iran

^fDepartment of Applied Cell Sciences, Faculty of Advanced Medical Sciences, Tabriz University of Medical Sciences, Tabriz, Iran

96–110

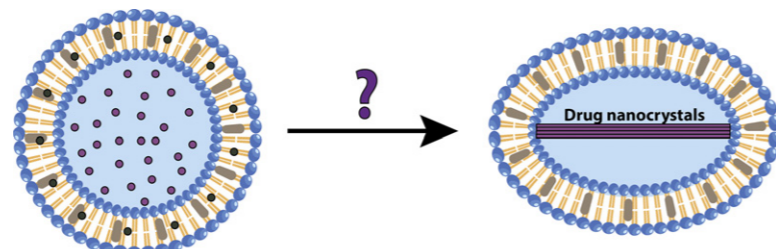
Drug nanocrystallisation within liposomes

Tang Li^a, David Cipolla^b, Thomas Rades^c, Ben J. Boyd^a

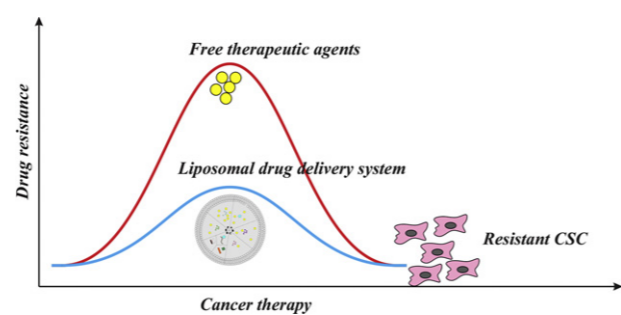
^aARC Centre of Excellence in Convergent Bio-Nano Science and Technology and Drug Delivery, Disposition and Dynamics, Monash Institute of Pharmaceutical Sciences, Monash University, Parkville, VIC, Australia

^bAradigm Corporation, Hayward, CA 94545, United States

^cFaculty of Health and Medical Sciences, Department of Pharmacy, University of Copenhagen, Copenhagen, Denmark



(Contents continued on inside back cover)



Additional material available online.



0168-3659(20181028)288:1-3

Available online at www.sciencedirect.com

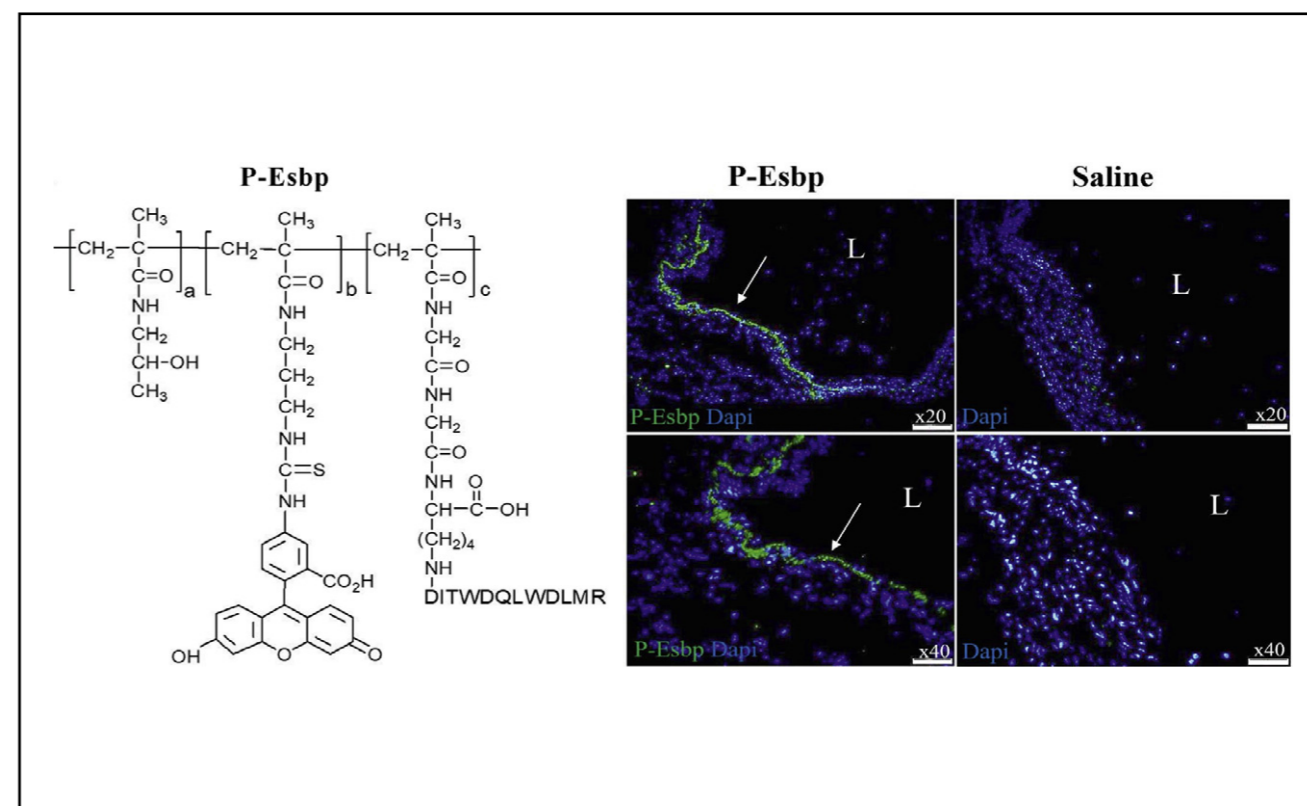
ScienceDirect

05054



journal of controlled release

OFFICIAL JOURNAL OF THE CONTROLLED RELEASE SOCIETY
AND THE JAPANESE SOCIETY OF DRUG DELIVERY SYSTEM



COVER STORY

New biomedical polymer targeting E-selectin to reduce atherosclerosis

The *Journal of Controlled Release* (JCR) publishes high-quality research articles in the broad field of delivery science and technology. This includes drug delivery systems and all aspects of formulations, such as physicochemical and biological properties of drugs, design and characterization of dosage forms, release mechanisms, *in vivo* testing, and formulation research and development in the disciplines of pharmaceutical, diagnostic, agricultural, environmental, cosmetic, and food industries. Manuscripts that advance fundamental understanding of principles and/or demonstrate advantages of novel technologies in safety and efficacy over current clinical standards will be given priority. Each issue has the cover story highlighting the significance of a selected article published in the issue. At the end of each quarter, the JCR editors select "The Editors' Choice" from the published research articles.

© 2018 Elsevier B.V. All rights reserved.

This journal and the individual contributions contained in it are protected under copyright by Elsevier B.V., and the following terms and conditions apply to their use:

Photocopying

Single photocopies of single articles may be made for personal use as allowed by national copyright laws. Permission of the Publisher and payment of a fee is required for all other photocopying, including multiple or systematic copying, copying for advertising or promotional purposes, resale, and all forms of document delivery. Special rates are available for educational institutions that wish to make photocopies for non-profit educational classroom use.

For information on how to seek permission visit www.elsevier.com/permissions or call (+44) 1865 843830 (UK) / (+1) 215 239 3804 (USA).

Derivative Works

Subscribers may reproduce tables of contents or prepare lists of articles including abstracts for internal circulation within their institutions. Permission of the Publisher is required for resale or distribution outside the institution.

Permission of the Publisher is required for all other derivative works, including compilations and translations (please consult www.elsevier.com/permissions).

Electronic Storage or Usage

Permission of the Publisher is required to store or use electronically any material contained in this journal, including any article or part of an article (please consult www.elsevier.com/permissions).

Except as outlined above, no part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without prior written permission of the Publisher.

Author inquiries

You can track your submitted article at <http://www.elsevier.com/track-submission>. You can track your accepted article at <http://www.elsevier.com/trackarticle>. You are also welcome to contact Customer Support via <http://service.elsevier.com>.

Language (usage and editing services)

Please write your text in good English (American or British usage is accepted, but not a mixture of these). Authors who feel their English language manuscript may require editing to eliminate possible grammatical or spelling errors and to conform to correct scientific English may wish to use the English Language Editing service available from Elsevier's WebShop <http://webshop.elsevier.com/languageediting/> or visit our customer support site <http://service.elsevier.com> for more information.

Illustration services

Elsevier's WebShop (<http://webshop.elsevier.com/illustrationservices>) offers Illustration Services to authors preparing to submit a manuscript but concerned about the quality of the images accompanying their article. Elsevier's expert illustrators can produce scientific, technical and medical-style images, as well as a full range of charts, tables and graphs. Image 'polishing' is also available, where our illustrators take your image(s) and improve them to a professional standard. Please visit the website to find out more.

Publication information: *Journal of Controlled Release* (ISSN 0168-3659). For 2018, volumes 269–292 are scheduled for publication. Subscription prices are available upon request from the Publisher or from the Elsevier Customer Service Department nearest you or from this journal's website (<http://www.elsevier.com/locate/jconrel>). Further information is available on this journal and other Elsevier products through Elsevier's website (<http://www.elsevier.com>). Subscriptions are accepted on a prepaid basis only and are entered on a calendar year basis. Issues are sent by standard mail (surface within Europe, air delivery outside Europe). Priority rates are available upon request. Claims for missing issues should be made within six months of the date of dispatch.

Orders, claims, and journal inquiries: please contact the Elsevier Customer Service Department nearest you:

St. Louis: Elsevier Customer Service Department, 3251 Riverport Lane, Maryland Heights, MO 63043, USA; phone: (877) 8397126 [toll free within the USA]; (+1) (314) 4478878 [outside the USA]; fax: (+1) (314) 4478077; e-mail: JournalCustomerService-usa@elsevier.com

Oxford: Elsevier Customer Service Department, The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, UK; phone: (+44) (1865) 843434; fax: (+44) (1865) 843970; e-mail: JournalsCustomerServiceEMEA@elsevier.com

Tokyo: Elsevier Customer Service Department, 4F Higashi-Azabu, 1-Chome Bldg, 1-9-15 Higashi-Azabu, Minato-ku, Tokyo 106-0044, Japan; phone: (+81) (3) 5561 5037; fax: (+81) (3) 5561 5047; e-mail: JournalsCustomerServiceJapan@elsevier.com

The Philippines: Elsevier Customer Service Department, 2nd Floor, Building H, UP-Ayalaland Technohub, Commonwealth Avenue, Diliman, Quezon City, Philippines 1101; phone: (+65) 63490222; fax: (+63) 2 352 1394; e-mail: JournalsCustomerServiceAPAC@elsevier.com

Sponsored Supplements and/or Commercial Reprints: For more information please contact Elsevier Life Sciences Commercial Sales, Radarweg 29, 1043 NX Amsterdam, The Netherlands; phone: (+31) (20) 485 2939 / 2059; e-mail: LSCS@elsevier.com

Advertising information: If you are interested in advertising or other commercial opportunities please e-mail Commercialsales@elsevier.com and your enquiry will be passed to the correct person who will respond to you within 48 hours.

USA mailing notice: *Journal of Controlled Release* (ISSN 0168-3659) is published semimonthly by Elsevier B.V., Radarweg 29, 1043 NX Amsterdam, The Netherlands. Periodicals postage paid at Jamaica, NY 11431 and additional mailing offices.

USA POSTMASTER: Send change of address to *Journal of Controlled Release*, Elsevier Customer Service Department, 3251 Riverport Lane, Maryland Heights, MO 63043, USA.

AIRFREIGHT AND MAILING in USA by Air Business Ltd., c/o Worldnet Shipping Inc., 156-15, 146th Avenue, 2nd Floor, Jamaica, NY 11434, USA.

Notice

No responsibility is assumed by the Publisher or the Controlled Release Society for any injury and/or damage to persons or property as a matter of products liability, negligence or otherwise, or from any use or operation of any methods, products, instructions or ideas contained in the material herein. Because of rapid advances in the medical sciences, in particular, independent verification of diagnoses and drug dosages should be made.

Although all advertising material is expected to conform to ethical (medical) standards, inclusion in this publication does not constitute a guarantee or endorsement of the quality or value of such product or of the claims made of it by its manufacturer.

© The paper used in this publication meets the requirements of ANSI/NISO Z39.48-1992 (Permanence of Paper)

For a full and complete Guide for Authors, please go to <http://www.elsevier.com/locate/jconrel>

(contents continued from outside back cover)

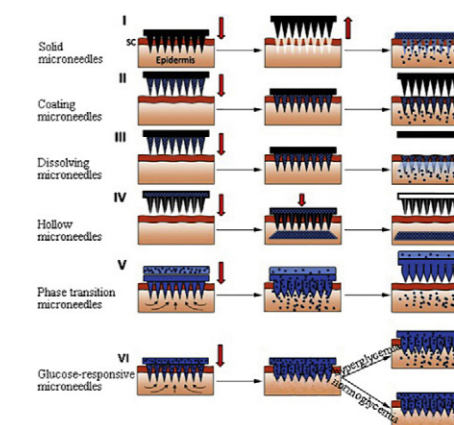
173–188

Preparation, properties and challenges of the microneedles-based insulin delivery system

Xiang Chen^a, Li Wang^a, Haojie Yu^a, Chengjiang Li^b, Jingyi Feng^b, Fazal Haq^a, Amin Khan^a, Rizwan Ullah Khan^a

^aState Key Laboratory of Chemical Engineering, College of Chemical and Biological Engineering, Zhejiang University, Hangzhou 310027, PR China

^bThe First Affiliated Hospital, College of Medicine, Zhejiang University, Hangzhou 310027, PR China



239–263

Recent advances in applying nanotechnologies for cancer immunotherapy

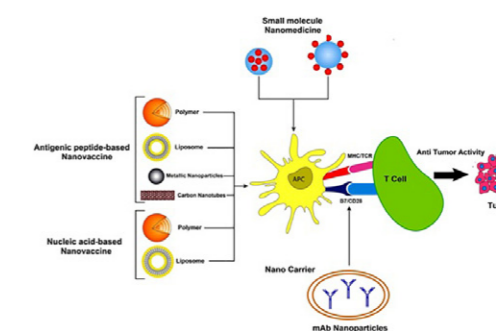
Reza Mahjub^{a,b}, Sukhdeep Jatana^a, Suen Ern Lee^a, Zhu Qin^{a,c}, Griffin Pauli^a, Meysam Soleimani^d, Soheil Madadi^d, Shyh-Dar Li^a

^aFaculty of Pharmaceutical Sciences, The University of British Columbia, Vancouver Campus, 5519-2405 Wesbrook Mall, Vancouver, British Columbia V6T 1Z3, Canada

^bDepartment of Pharmaceutics, School of Pharmacy, Hamadan University of Medical Sciences, Hamadan, Iran

^cJiangsu Academy of Agricultural Sciences, Institute of Veterinary Immunology & Engineering, Nanjing, Jiangsu 210014, China

^dDepartment of Pharmacognosy and Pharmaceutical Biotechnology, School of Pharmacy, Hamadan University of Medical Sciences, Hamadan, Iran



RESEARCH PAPERS

1–13

Hyaluronic acid-endostatin2-alf1 (HA-ES2-AF) nanoparticle-like conjugate for the target treatment of diseases

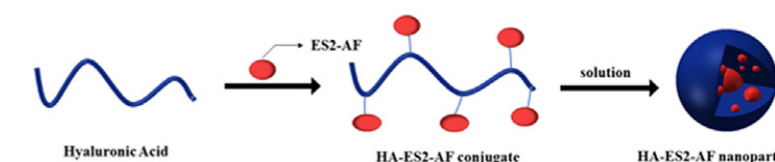
Feng Sun^{a,b}, Yang Yu^{a,b,c}, Zhifang Yang^{a,b}, Zhendong Wang^{a,b}, Yan Li^{a,b}, Fengshan Wang^{a,d}, Haining Tan^{a,b,d}

^aNational Glycoengineering Research Centre, Shandong University, Jinan 250012, Shandong, PR China

^bShandong Provincial Key Laboratory of Carbohydrate chemistry and Glycobiology, Shandong University, Jinan, 250012, Shandong, PR China

^cInstitute of Advanced Medical Sciences, Shandong University, Jinan 250012, Shandong, PR, China

^dSchool of Pharmaceutical Sciences, Shandong University, Jinan, 250012, Shandong, PR China



(Contents continued on last page of this issue)