

## 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

Chitosan-gelatin-platelet gel composite scaffold for bone regeneration  
K. Park (West Lafayette, USA) 137

## Reviews

Protein-lipid nanohybrids as emerging platforms for drug and gene delivery: Challenges and outcomes  
M. Gaber, W. Medhat, M. Hany, N. Saher, J.-Y. Fang and A. Elzoghby (Taoyuan, Taiwan; Alexandria, Egypt) 75

Targeting tumor associated macrophages (TAMs) *via* nanocarriers  
Y. Singh, V.K. Pawar, J.G. Meher, K. Raval, A. Kumar, R. Shrivastava, S. Bhadauria and M.K. Chourasia (Lucknow, India) 92

## Research papers

Block copolymer-boron cluster conjugate for effective boron neutron capture therapy of solid tumors  
P. Mi, H. Yanagie, N. Dewi, H.-C. Yen, X. Liu, M. Suzuki, Y. Sakurai, K. Ono, H. Takahashi, H. Cabral, K. Kataoka and N. Nishiyama (Chengdu, PR China; Kawasaki, Tokyo, Osaka, Yokohama, Japan) 1

Transdermal delivery of atorvastatin calcium from novel nanovesicular systems using polyethylene glycol fatty acid esters: Ameliorated effect without liver toxicity in poloxamer 407-induced hyperlipidemic rats  
M.O. Mahmoud, H.M. Aboud, A.H. Hassan, A.A. Ali and T.P. Johnston (Beni-Suef, Egypt; Kansas City, MO, USA) 10

Paclitaxel dimers assembling nanomedicines for treatment of cervix carcinoma  
Q. Pei, X. Hu, S. Liu, Y. Li, Z. Xie and X. Jing (Jilin, Hefei, PR China) 23

Pyridamine-sensitive proton-coupled organic cation (H<sup>+</sup>/OC) antiporter for brain-specific drug delivery  
X. Wang, B. Qi, H. Su, J. Li, X. Sun, Q. He, Y. Fu and Z. Zhang (Chengdu, PR China) 34

Enhanced topical penetration, system exposure and anti-psoriasis activity of two particle-sized, curcumin-loaded PLGA nanoparticles in hydrogel  
L. Sun, Z. Liu, L. Wang, D. Cun, H.H.Y. Tong, R. Yan, X. Chen, R. Wang and Y. Zheng (Macao SAR, Liaoning, China) 44

Retinal gene delivery enhancement by lycopene incorporation into cationic niosomes based on DOTMA and polysorbate 60  
M. Mashal, N. Attia, G. Puras, G. Martínez-Navarrete, E. Fernández and J.L. Pedraz (Vitoria-Gasteiz, Elche, Spain; Alexandria, Egypt) 55

Effectiveness of tissue engineered chitosan-gelatin composite scaffold loaded with human platelet gel in regeneration of critical sized radial bone defect in rat  
A. Oryan, S. Alidadi, A. Bigham-Sadegh, A. Moshiri and A. Kamali (Shiraz, Shahrekord, Tehran, Iran) 65

Mastocarcinoma therapy synergistically promoted by lysosome dependent apoptosis specifically evoked by 5-Fu@nanogel system with passive targeting and pH activatable dual function  
X. Zhu, Y. Sun, D. Chen, J. Li, X. Dong, J. Wang, H. Chen, Y. Wang, F. Zhang, J. Dai, R.P. Pirraco, S. Guo, A.P. Marques, R.L. Reis and W. Li (Shanghai, Shandong, China; Guimarães, Portugal) 107

Tumortropic adipose-derived stem cells carrying smart nanotherapeutics for targeted delivery and dual-modality therapy of orthotopic glioblastoma  
W.-C. Huang, I.-L. Lu, W.-H. Chiang, Y.-W. Lin, Y.-C. Tsai, H.-H. Chen, C.-W. Chang, C.-S. Chiang and H.-C. Chiu (Hsinchu, Taichung, Taiwan) 119

Sequence segregation improves non-covalent protein delivery  
F. Sgolastra, C.M. Backlund, E. Ilker Ozay, B.M. deRonde, L.M. Minter and G.N. Tew (Amherst, MA, United States) 131

Graphical Abstracts Contents Listing doi: S0168-3659(17)30567-9 e1

Calendar I

Additional material available online.

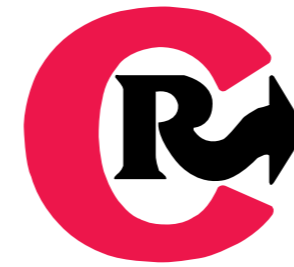


0168-3659(20170528)254:C;1-F

Available online at www.sciencedirect.com

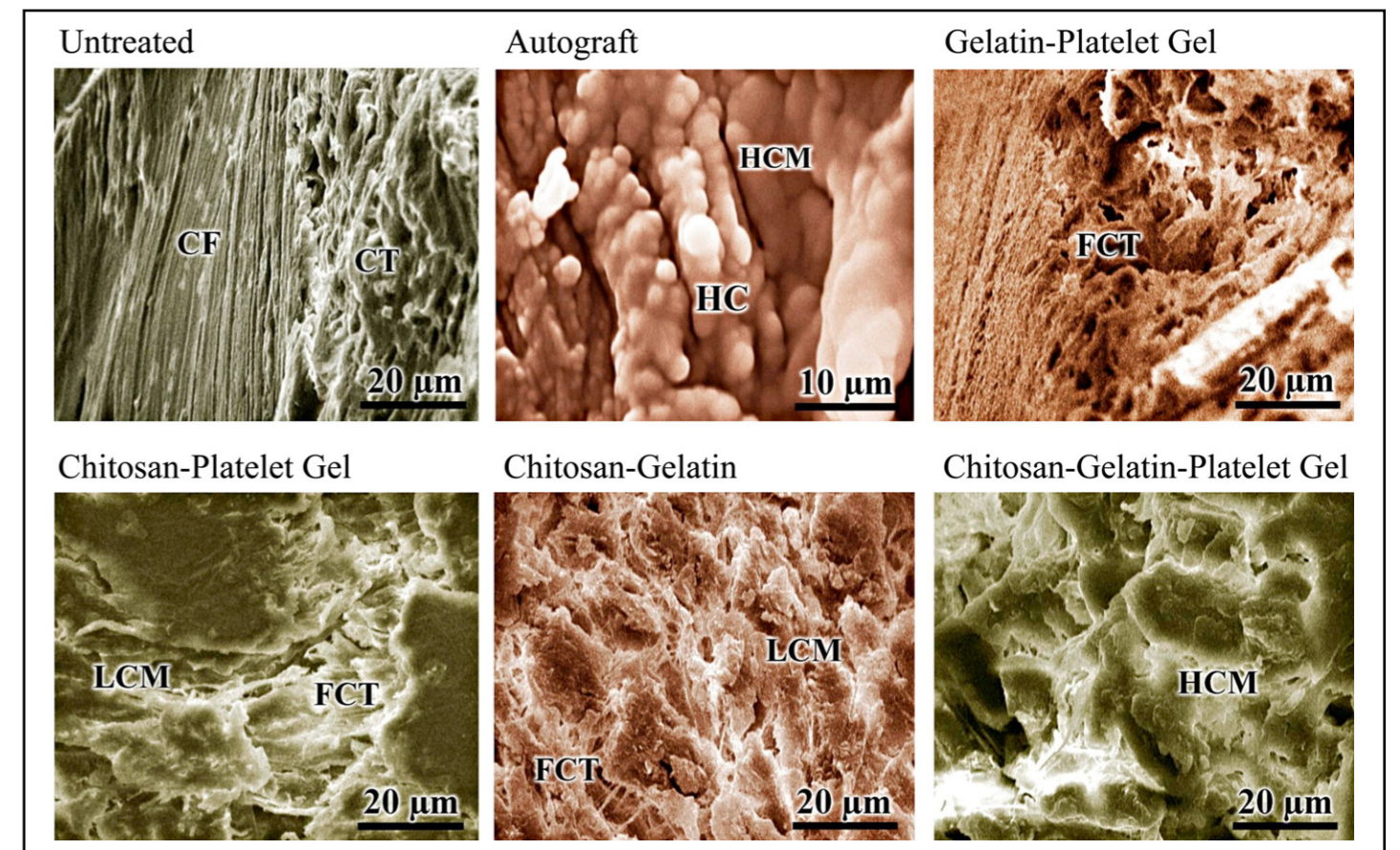
ScienceDirect

05054



# journal of controlled release

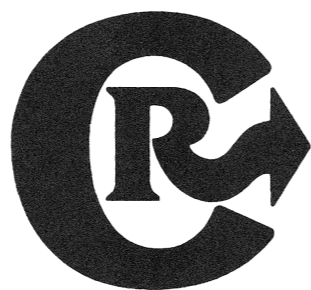
OFFICIAL JOURNAL OF THE CONTROLLED RELEASE SOCIETY  
AND THE JAPANESE SOCIETY OF DRUG DELIVERY SYSTEM



## COVER STORY

Chitosan-gelatin-platelet gel composite scaffold for bone regeneration

# journal of controlled release



Official Journal of the Controlled Release Society and of the Japanese Society of Drug Delivery System

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.

## EDITORS

### EDITOR-IN-CHIEF

**Prof. K. Park**, Purdue University, Departments of Biomedical Engineering and Pharmaceutics, West Lafayette, IN, USA;  
E-mail: kpark@purdue.edu

### Associate Editors for the Americas

**Prof. Y.H. Bae**, Dept. of Pharmaceutics and Pharmaceutical Chemistry, University of Utah, 421 Wakara Way, Salt Lake City, UT 84108, USA;

E-mail: you.bae@utah.edu

**Prof. S. Mitragotri**, Dept. of Chemical Engineering, University of California at Santa Barbara, Mail Code 5080, Santa Barbara, CA 93106, USA;

E-mail: samir@engineering.ucsb.edu

**Prof. S.P. Schwendeman**, Dept. of Pharmaceutical Sciences, University of Michigan, 428 Church Street, Ann Arbor, MI 48109, USA;

E-mail: schwende@umich.edu

### EDITORS FOR EUROPE

#### Editor

**Prof. S.C. De Smedt**, Ghent Research Group on Nanomedicines, Ghent University, Ottergemsesteenweg 460, 9000 Ghent, Belgium

E-mail: Stefaan.desmedt@ugent.be

#### Associate Editors

**Prof. T.G.G.M. Lammers**, Department of Experimental Molecular Imaging, RWTH Aachen University Clinic, Pauwelsstrasse 30, 52074 Aachen, Germany;

E-mail: tlammers@ukaachen.de

**Prof. J.-C. Leroux**, Inst. of Pharmaceutical Sciences, Eidgenössische Technische Hochschule (ETH) Zürich, Wolfgang-Pauli-Str. 10, 8093 Zürich, Switzerland

E-mail: jleroux@ethz.ch

**Prof. D. Peer**, Department of Cell Research and Immunology, Tel-Aviv University Ramat Aviv, Tel-Aviv, 69978 Israel;

E-mail: peer@post.tau.ac.il

### EDITORS FOR ASIA

#### Editor

**Prof. I.C. Kwon**, Biomedical Research Center, Korea Institute of Science and Technology (KIST), 39-1 Hawolgok-Dong, 136-791 Seongbuk-Gu, Seoul, South Korea;

E-mail: ikwon@kist.re.kr

#### Associate Editors

**Prof. H. Harashima**, Lab. Mol. Design of Pharmaceutics, Fac. of Pharmaceutical Sciences, Hokkaido University, Kita 12, Nishi 6, Kita-ku, 060-0812 Sapporo, Japan;

E-mail: harasima@pharm.hokudai.ac.jp

**Prof. A. Kikuchi**, Dept. of Materials Science and Technology, Tokyo University of Science, 6-3-1 Niijuku, Katsushika, 125-8585 Tokyo, Japan;

E-mail: kikuchia@rs.noda.tus.ac.jp

**Prof. Y. Oh**, College of Pharmacy, Seoul National University, 1 Gwanak-ro, Gwanak-gu, Seoul, 151-742 Korea;

Email: ohyk@snu.ac.kr

#### Review Editor

**Prof. V.P. Torchilin**, Pharmaceutical Sciences, Northeastern University, 360 Huntington Ave., Boston, MA 02115-5000, USA;

E-mail: v.torchilin@neu.edu

#### Special Issue Editor

**Prof. W.E. Hennink**, Dept. of Pharmaceutics, Utrecht Inst. for Pharmaceutical Sciences, Universiteit Utrecht, Universiteitsweg 99, 3584 CG Utrecht, Netherlands

#### Theme Issue Editor

**Prof. J. Hanes**, The Wilmer Eye Institute, Johns Hopkins School of Medicine, 400 N. Broadway, Baltimore, MD, USA;

E-mail: hanes@jhmi.edu

#### Concept Papers Editor

**Prof. Y.H. Bae**, Dept. of Pharmaceutics and Pharmaceutical Chemistry, University of Utah, 421 Wakara Way, Salt Lake City, UT 84108, USA;

E-mail: you.bae@utah.edu

#### Advisor

**Prof. T. Nagai**, E-mail: nagai-t@mbc.ocn.ne.jp

#### Editorial Board

**M.J. Alonso**, Santiago de Compostela, Spain

**T.L. Bowersock**, Kalamazoo, MI, USA

**X. Chen**, Changchun, China

**P. Colombo**, Parma, Italy

**P. Couvreur**, Châtenay-Malabry, France

**M.C. Davies**, Nottingham, UK

**A.J. Domb**, Jerusalem, Israel

**R. Duncan**, Cardiff, UK

**L. Ensign**, Baltimore, MD, USA

**E. Fattal**, Châtenay-Malabry, France

**M. Foldvari**, Waterloo, Canada

**B. Gander**, Zürich, Switzerland

**H. Ghandehari**, Salt Lake City, UT, USA

**G. Golomb**, Jerusalem, Israel

**D.W. Grainger**, Salt Lake City, UT, USA

**R. Gurny**, Geneva, Switzerland

**M. Hashida**, Kyoto, Japan

**J.A. Hubbell**, Lausanne, Switzerland

**L. Illum**, Nottingham, UK

**S.Y. Jeong**, Seoul, Korea

**T. Jin**, Shanghai, China

**A.T. Jones**, Cardiff, UK

**A. Kabanov**, Omaha, NE, USA

**K. Kataoka**, Tokyo, Japan

**Y. Kawashima**, Gifu, Japan

**J. Kopeček**, Salt Lake City, UT, USA

**G.S. Kwon**, Madison, WI, USA

**S.J. Lee**, Seoul, Korea

**C.M. Lehr**, Saarbrücken, Germany

**K.W. Leong**, Baltimore, MD, USA

**T. Li**, Lexington, KY, USA

**K. Mäder**, Halle (Saale), Germany

**H. Maeda**, Kumamoto, Japan

**E. Mathiowitz**, Providence, RI, USA

**A.G. Mikos**, Houston, TX, USA

**T. Minko**, Piscataway, NJ, USA

**S.M. Moghimi**, Stockton on Tees, United Kingdom

**R. Niven**, Half Moon Bay, CA, USA

**H. Okada**, Tokyo, Japan

**T. Okano**, Tokyo, Japan

**D.W. Pack**, Urbana, IL, USA

**N.A. Peppas**, Austin, TX, USA

**Y. Perrie**, Birmingham, UK

**M. Prausnitz**, Atlanta, GA, USA

**D. Putnam**, Ithaca, NY, USA

**T. Rades**, Copenhagen, Denmark

**M.J. Rathbone**, Kuala Lumpur, Malaysia

**A.P. Rolland**, San Diego, CA, USA

**K. Roy**, Atlanta, GA, USA

**W.M. Saltzman**, New Haven, CT, USA

**R.A. Siegel**, Minneapolis, MN, USA

**J. Siepmann**, Lille, France

**P.S. Stayton**, Seattle, WA, USA

**Y. Sugiyama**, Tokyo, Japan

**H.-W. Sung**, Hsinchu, Taiwan

**K. Takayama**, Tokyo, Japan

**I. Uchegbu**, London, UK

**K. Ulbrich**, Prague, Czech Republic

**A. Urtti**, Helsinki, Finland

**E. Wagner**, Munich, Germany

**C. Wang**, Minneapolis, MN, USA

**C.-H. Wang**, Singapore

**C.O. Yun**, Seoul, Korea

**Q. Zhang**, Beijing, China

**Z. Zhong**, Suzhou, China

#### Founding Editors

**Prof. J. Feijen**, University of Twente, The Netherlands

**Dr. J. Heller**, USA

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