DESCRIPTION

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.

**Benefits to authors**

We also provide many author benefits, such as free PDFs, a liberal copyright policy, special discounts on Elsevier publications and much more. Please click here for more information on our [author services](#).

Please see our [Guide for Authors](#) for information on article submission. If you require any further information or help, please visit our [Support Center](#).

AUDIENCE

Investigators involved in pharmacy, biomaterials, chemistry, polymer chemistry, several specializations in medicine, agricultural sciences, pharmaceutics, chemical technology and mechanical engineering.

IMPACT FACTOR

2019: 7.727 © Clarivate Analytics Journal Citation Reports 2020
ABSTRACTING AND INDEXING

CAB International
Chemical Abstracts
Current Contents - Life Sciences
Embase
International Pharmaceutical Abstracts
Polymer Contents
Science Citation Index
PubMed/Medline
BIOSIS Citation Index
Scopus

EDITORIAL BOARD

Editor-in-Chief
Christine Allen, University of Toronto Leslie Dan Faculty of Pharmacy, 19 Russell St, Toronto, M5S 3M2, Ontario, Canada

Deputy Editors-in-Chief
Stefaan De Smedt, Ghent University Laboratory of General Biochemistry and Physical Pharmacy, Gent, Belgium
Yu-Kyoung Oh, Seoul National University Nano Biodrug Delivery Lab, Seoul, Korea, Republic of

Associate Editors for the Americas and Oceania
Honggang Cui, Dept. of Materials Science and Engineering, Whiting School of Engineering, Dept. of Oncology and The Sidney Kimmel Comprehensive Cancer Center Johns Hopkins University School of Medicine, The Johns Hopkins University, 3400 N Charles St, Baltimore, Maryland, 2121, United States
Research Expertise: Prodrugs, bioconjugates, peptide therapeutics, hydrogels, supramolecular biomaterials, self-assembling biomaterials, peptide-based biomaterials, nanoparticle synthesis, nanomedicines, local delivery, HIV.

Steven Schwendeman, University of Michigan Department of Pharmaceutical Sciences, 428 Church Street, Ann Arbor, Michigan, MI 48109, United States
Research Expertise: Biodegradable polymers, peptides and proteins, drug stability, ocular delivery release mechanism, vaccines, nitric oxide, brain cancer

Yoon Yeo, Purdue University Department of Industrial and Physical Pharmacy, 575 Stadium Mall Drive, West Lafayette, Indiana, 47907-2091, United States
Research Expertise: Nanoparticle-based drug/gene carriers; drug delivery for cancer immunotherapy and inflammatory/infectious diseases; nanoparticle surface modification; functional biomaterials; in vitro evaluation of drug delivery systems (with a vision to expand to IVIVC of complex parenteral dosage forms)

Associate Editors for Africa, Europe and Middle East
Paolo Caliceti, University of Padua Department of Pharmaceutical and Pharmacological Sciences, via Marzolo Francesco 5, 35131, Padova, Italy
Research Expertise: Polymer therapeutics; Bioconjugation and bioconjugates; Protein delivery (PEGylation and colloidal systems); Supramolecular drug delivery systems; Polymeric micro- and nanoparticlesGold nanoparticles; Liposomes and micelles; Stimuli sensitive materials; Tumour targeting (active and passive targeting); Biopharmaceutics

Twan Lammers, RWTH Aachen University Department of Experimental Molecular Imaging, Pauwelsstrasse 30, 52074, Aachen, Germany
Research Expertise: Cell specific targeting of drugs; Lipid -based nanoparticles; Ionizable lipids; RNA therapeutics (siRNA; mRNA; saRNA; circular RNA); Gene therapy; Genome Editing; Diseases: Leukocytes implicated diseases (blood cancers; Inflammation; rare genetic diseases); GBM; Ovarian Cancer; Pancreatic Cancer

Dan Peer, Tel Aviv University, Tel Aviv, Israel.
Lipid nanoparticles, selective targeting to subsets of cells, RNA Therapeutics, Liposomes, mAbs

Associate Editors for Asia
Hideyoshi Harashima, Hokkaido University Faculty of Pharmaceutical Sciences, Kita 12, Nishi 6, Kita-ku, 060-0812, Sapporo, Japan
Research Expertise: Gene delivery, nanomedicine, microfluidics, cancer immunology, mitochondria, BBB.
Akihiko Kikuchi, Tokyo University of Science Faculty of Industrial Science and Technology Graduate School of Industrial Science and Technology Department of Materials, 6-3-1 Niijuku, Katsushika, 125-8585, Yamakoshigun, Japan
Research Expertise: Polymeric materials, biomaterials, micro- nanoparticles, micelles regenerative medicine, tissue engineering, imaging, theranostics

Jong Oh Kim, Yeungnam University College of Pharmacy, 280 Daehak-Ro,, 38541, Gyeongsan, Korea, Republic of
Research Expertise: Combination, chemotherapy, immuno-phototherapy, on-demand, hybrid nanoparticle, solubilization

Xun Sun, West China School of Pharmacy, Key Laboratory of Drug Targeting and Drug Delivery System, Sichuan University, No.17, Block 3, Southern Renmin Road, 610041, Chengdu, China
Research Expertise: Vaccine delivery, nucleic acid delivery, Transdermal delivery, Mucosal delivery, Immunomodulatory, Exosome

Zhiyuan Zhong, Soochow University, 215006, Suzhou, China
Research Expertise: Biodegradable polymersomes; polymeric micelles; actively targeted cancer nanomedicines; intracellular protein delivery; polymeric vectors for siRNA delivery

Review Editor
Vladimir Torchilin, Northeastern University Center for Pharmaceutical Biotechnology and Nanomedicine, 140 The Fenway, room 214 360 Huntington Avenue, Boston, Massachusetts, MA 02125, United States

Special Issue Editor
Wim Hennink, Utrecht University Department of Pharmaceutical Sciences, Universiteitsweg 99, 3584 CG, Utrecht, Netherlands
Raymond Schifflers, University Medical Centre Utrecht Laboratory of Clinical Chemistry and Haematology, Heidelberglaan 100, 3584 CX, Utrecht, Netherlands

Perspective Editor
Randy Mrsny, University of Bath Department of Pharmacy and Pharmacology, Bath, United Kingdom

Theme Issue Editor
Justin Hanes, Johns Hopkins University Center for Nanomedicine, 400 N. Broadway, Baltimore, Maryland, MD 21231, United States

Editorial Board
Hidetaka Akita, Chiba, Japan
Maria José Alonso, Santiago de Compostela, Spain
Carmen Alvarez-Lorenzo, Santiago de Compostela, Spain
Mansoor Amiji, Boston, United States
You Han Bae, Salt Lake City, Utah, United States
Terry Bowersock, Kalamazoo, Michigan, United States
Kevin Braeckmans, Gent, Belgium
Youngro Byun, Seoul, Korea, Republic of
Jiang Chen, Shanghai, China
Xuesi Chen, Changchun, China
Patrick Couvreur, Chatenay Malabry, France
Avi Domb, Jerusalem, Israel
Laura Ensign, Baltimore, Maryland, United States
Tomáš Etrich, Praha, Czech Republic
Elias Fattal, Chatenay Malabry, France
Marianna Foldvari, Waterloo, Ontario, Canada
Zhihua Gan, Beijing, China
Bruno Gander, Zurich, Switzerland
Hamid Ghandehari, Salt Lake City, Utah, United States
Gershon Golomb, Jerusalem, Israel
David Grainger, Salt Lake City, Utah, United States
Yongzhuo Huang, Shanghai Institute of Materia Medica Chinese Academy of Sciences, Shanghai, China
Tatsuhiro Ishida, Tokushima, Japan
Tuo Jin, Shanghai, China
Arwyn Jones, Cardiff, United Kingdom
Alexander Kabanov, Chapel Hill, North Carolina, United States
Kazunori Kataoka, Tokyo, Japan
In-San Kim, Seongbuk-Gu, Seoul, Korea, Republic of
Kwangmeyung Kim, Seongbuk-gu, Korea, Republic of
Jindrich Henry Kopecek, Salt Lake City, Utah, United States
Glen Kwon, Madison, Wisconsin, United States
Ick Chan Kwon, Seongbuk-Gu, Seoul, Korea, Republic of
Minhyung Lee, Yongin, Korea, Republic of
Claus-Michael Lehr, Saarbruecken, Germany
Kam Leong, New York, New York, United States
Jean-Christophe Leroux, Zurich, Switzerland
Tonglei Li, West Lafayette, Indiana, United States
Karsten Mäder, Halle/Saale, Germany
Hiroshi Maeda, Kumamoto, Japan
Enrico Mastrobattista, Utrecht, Netherlands
Edith Mathiowitz, Providence, Rhode Island, United States
Olivia Merkel, Munich, Germany
Tony Mikos, Houston, Texas, United States
Tamara Minko, Piscataway, New Jersey, United States
Samir Mitragotri, Cambridge, Massachusetts, United States
Seyed Moein Moghimi, Durham, United Kingdom
Yukio Nagasaki, Tsukuba, Japan
Nobuhiro Nishiyama, Yokohama, Japan
Hiroaki Okada, Hachioji, Japan
Teruo Okano, Shinjuku-Ku, Japan
Daniel Pack, Champaign, Illinois, United States
Jae Hyung Park, Suwon, Korea, Republic of
Kinam Park, West Lafayette, Indiana, United States
Nicholas Peppas, Austin, Texas, United States
Yvonne Perrie, Glasgow, United Kingdom
Mark Prausnitz, Atlanta, Georgia, United States
Suzie Pun, Seattle, Washington, United States
Thomas Rades, København, Denmark
Krishnendu Roy, Atlanta, Georgia, United States
Mark W. Saltzman, New Haven, Connecticut, United States
Bruno Sarmento, Porto, Portugal
Youqing Shen, Hangzhou, China
Ronald Siegel, Minneapolis, Minnesota, United States
Jürgen Siepmann, Lille cedex, France
Molly Stevens, London, United Kingdom
Hsing-Wen Sung, Hsinchu, Taiwan
Ijeoma Uchegbu, London, United Kingdom
Arto Urtti, HELSINKI, Finland
Maria Jesus Vicent, Valencia, Spain
Ernst Wagner, München, Germany
Chi-Hwa Wang, Singapore, Singapore
Qiang Zhang, Beijing, China
Xinyuan Zhu, Shanghai, China

Honorary Editor
Tsuneji Nagai, Tokyo, Japan

Founding Editors
J. Feijen, Hengelo, Netherlands
J. Heller
GUIDE FOR AUTHORS

Your Paper Your Way
We now differentiate between the requirements for new and revised submissions. You may choose to submit your manuscript as a single Word or PDF file to be used in the refereeing process. Only when your paper is at the revision stage, will you be requested to put your paper in to a 'correct format' for acceptance and provide the items required for the publication of your article.

To find out more, please visit the Preparation section below.

SCOPE OF THE JOURNAL
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. For more information about the types of articles sought by JCR please read the this editorial.

Papers that provide no new concepts or mechanistic insights will not be considered. The Letter of Submission should explain in one paragraph the originality and significance of the submitted work. The manuscript will not be processed without this information.

Please note that figures and tables should be embedded in the text as close as possible to where they are initially cited and for REVISED PAPERS ONLY it is mandatory to upload separate graphic and table files also as these will be required if your manuscript is accepted for publication.

Contact details for submission
Persons considering submitting a 'Review' article are encouraged to send an outline and a CV to the Review Editor.

Review Editor
Prof. V.P. Torchilin, School of Pharmacy, Bouve College of Health Sciences, Northeastern University, Mugar Building, Room 312, 360 Huntington Ave, Boston, MA 02115, USA; e-mail: v.torchilin@neu.edu

Submission checklist
You can use this list to carry out a final check of your submission before you send it to the journal for review. Please check the relevant section in this Guide for Authors for more details.

Ensure that the following items are present:

One author has been designated as the corresponding author with contact details:
• E-mail address
• Full postal address

All necessary files have been uploaded:
Manuscript:
• Include keywords
• All figures (include relevant captions)
• All tables (including titles, description, footnotes)
• Ensure all figure and table citations in the text match the files provided
• Indicate clearly if color should be used for any figures in print

Graphical Abstracts / Highlights files (where applicable)
Supplemental files (where applicable)

Further considerations
• Manuscript has been 'spell checked' and 'grammar checked'
• All references mentioned in the Reference List are cited in the text, and vice versa
• Permission has been obtained for use of copyrighted material from other sources (including the Internet)
• A competing interests statement is provided, even if the authors have no competing interests to declare
• Journal policies detailed in this guide have been reviewed
• Referee suggestions and contact details provided, based on journal requirements

For further information, visit our Support Center.

BEFORE YOU BEGIN

Ethics in publishing
Please see our information pages on Ethics in publishing and Ethical guidelines for journal publication.

Declaration of interest
All authors must disclose any financial and personal relationships with other people or organizations that could inappropriately influence (bias) their work. Examples of potential competing interests include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding. Authors must disclose any interests in two places: 1. A summary declaration of interest statement in the title page file (if double-blind) or the manuscript file (if single-blind). If there are no interests to declare then please state this: 'Declarations of interest: none'. This summary statement will be ultimately published if the article is accepted. 2. Detailed disclosures as part of a separate Declaration of Interest form, which forms part of the journal's official records. It is important for potential interests to be declared in both places and that the information matches. More information.

Submission declaration and verification
Submission of an article implies that the work described has not been published previously (except in the form of an abstract, a published lecture or academic thesis, see 'Multiple, redundant or concurrent publication' for more information), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere in the same form, in English or in any other language, including electronically without the written consent of the copyright-holder. To verify originality, your article may be checked by the originality detection service Crossref Similarity Check.

Preprints
Please note that preprints can be shared anywhere at any time, in line with Elsevier's sharing policy. Sharing your preprints e.g. on a preprint server will not count as prior publication (see 'Multiple, redundant or concurrent publication' for more information).

Use of inclusive language
Inclusive language acknowledges diversity, conveys respect to all people, is sensitive to differences, and promotes equal opportunities. Content should make no assumptions about the beliefs or commitments of any reader; contain nothing which might imply that one individual is superior to another on the grounds of age, gender, race, ethnicity, culture, sexual orientation, disability or health condition; and use inclusive language throughout. Authors should ensure that writing is free from bias, stereotypes, slang, reference to dominant culture and/or cultural assumptions. We advise to seek gender neutrality by using plural nouns (“clinicians, patients/clients”) as default/wherever possible to avoid using "he, she," or "he/she." We recommend avoiding the use of descriptors that refer to personal attributes such as age, gender, race, ethnicity, culture, sexual orientation, disability or health condition unless they are relevant and valid. These guidelines are meant as a point of reference to help identify appropriate language but are by no means exhaustive or definitive.

Author contributions
For transparency, we encourage authors to submit an author statement file outlining their individual contributions to the paper using the relevant CRediT roles: Conceptualization; Data curation; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources; Software; Supervision; Validation; Visualization; Roles/Writing - original draft; Writing - review & editing. Authorship statements should be formatted with the names of authors first and CRediT role(s) following. More details and an example
Changes to authorship
Authors are expected to consider carefully the list and order of authors before submitting their manuscript and provide the definitive list of authors at the time of the original submission. Any addition, deletion or rearrangement of author names in the authorship list should be made only before the manuscript has been accepted and only if approved by the journal Editor. To request such a change, the Editor must receive the following from the corresponding author: (a) the reason for the change in author list and (b) written confirmation (e-mail, letter) from all authors that they agree with the addition, removal or rearrangement. In the case of addition or removal of authors, this includes confirmation from the author being added or removed. Only in exceptional circumstances will the Editor consider the addition, deletion or rearrangement of authors after the manuscript has been accepted. While the Editor considers the request, publication of the manuscript will be suspended. If the manuscript has already been published in an online issue, any requests approved by the Editor will result in a corrigendum.

Article transfer service
This journal is part of our Article Transfer Service. This means that if the Editor feels your article is more suitable in one of our other participating journals, then you may be asked to consider transferring the article to one of those. If you agree, your article will be transferred automatically on your behalf with no need to reformat. Please note that your article will be reviewed again by the new journal. More information.

Copyright
Upon acceptance of an article, authors will be asked to complete a 'Journal Publishing Agreement' (see more information on this). An e-mail will be sent to the corresponding author confirming receipt of the manuscript together with a 'Journal Publishing Agreement' form or a link to the online version of this agreement.

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 and for all other derivative works, including compilations and translations. If excerpts from other copyrighted works are included, the author(s) must obtain written permission from the copyright owners and credit the source(s) in the article. Elsevier has preprinted forms for use by authors in these cases.

For gold open access articles: Upon acceptance of an article, authors will be asked to complete an 'Exclusive License Agreement' (more information). Permitted third party reuse of gold open access articles is determined by the author's choice of user license.

Author rights
As an author you (or your employer or institution) have certain rights to reuse your work. More information.

Elsevier supports responsible sharing
Find out how you can share your research published in Elsevier journals.

Role of the funding source
You are requested to identify who provided financial support for the conduct of the research and/or preparation of the article and to briefly describe the role of the sponsor(s), if any, in study design; in the collection, analysis and interpretation of data; in the writing of the report; and in the decision to submit the article for publication. If the funding source(s) had no such involvement then this should be stated.

Open access
Please visit our Open Access page for more information.

Elsevier Researcher Academy
Researcher Academy is a free e-learning platform designed to support early and mid-career researchers throughout their research journey. The "Learn" environment at Researcher Academy offers several interactive modules, webinars, downloadable guides and resources to guide you through the process of writing for research and going through peer review. Feel free to use these free resources to improve your submission and navigate the publication process with ease.
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 Author Services.

Submission
Our online submission system guides you stepwise through the process of entering your article details and uploading your files. The system converts your article files to a single PDF file used in the peer-review process. Editable files (e.g., Word, LaTeX) are required to typeset your article for final publication. All correspondence, including notification of the Editor's decision and requests for revision, is sent by e-mail.

Additional information
The authors should ensure that they have written entirely original works, and if the authors have used the work and/or words of others, this has been appropriately cited or quoted. An author should not in general publish manuscripts describing essentially the same research in more than one journal of primary publication. Plagiarism in all its forms as well as submission of the same manuscript to more than one journal concurrently constitutes unethical publishing behaviour and are unacceptable. Thus, the Letter of Submission should explain in one paragraph the originality and significance of the submitted work. The manuscript will not be processed without this information.

PREPARATION

NEW SUBMISSIONS
Submission to this journal proceeds totally online and you will be guided stepwise through the creation and uploading of your files. The system automatically converts your files to a single PDF file, which is used in the peer-review process.
As part of the Your Paper Your Way service, you may choose to submit your manuscript as a single file to be used in the refereeing process. This can be a PDF file or a Word document, in any format or layout that can be used by referees to evaluate your manuscript. It should contain high enough quality figures for refereeing. If you prefer to do so, you may still provide all or some of the source files at the initial submission. Please note that individual figure files larger than 10 MB must be uploaded separately.

References
There are no strict requirements on reference formatting at submission. References can be in any style or format as long as the style is consistent. Where applicable, author(s) name(s), journal title/book title, chapter title/article title, year of publication, volume number/book chapter and the article number or pagination must be present. Use of DOI is highly encouraged. The reference style used by the journal will be applied to the accepted article by Elsevier at the proof stage. Note that missing data will be highlighted at proof stage for the author to correct.

Formatting requirements
There are no strict formatting requirements but all manuscripts must contain the essential elements needed to convey your manuscript, for example Abstract, Keywords, Introduction, Materials and Methods, Results, Conclusions, Artwork and Tables with Captions.
If your article includes any Videos and/or other Supplementary material, this should be included in your initial submission for peer review purposes.
Divide the article into clearly defined sections.

Figures and tables embedded in text
Please ensure the figures and the tables included in the single file are placed next to the relevant text in the manuscript, rather than at the bottom or the top of the file. The corresponding caption should be placed directly below the figure or table.

Peer review
This journal operates a single blind review process. All contributions will be initially assessed by the editor for suitability for the journal. Papers deemed suitable are then typically sent to a minimum of one independent expert reviewer to assess the scientific quality of the paper. The Editor is responsible for the final decision regarding acceptance or rejection of articles. The Editor's decision is final. More information on types of peer review.

REVISED SUBMISSIONS
Use of word processing software
Regardless of the file format of the original submission, at revision you must provide us with an editable file of the entire article. Keep the layout of the text as simple as possible. Most formatting codes will be removed and replaced on processing the article. The electronic text should be prepared in a way very similar to that of conventional manuscripts (see also the Guide to Publishing with Elsevier). See also the section on Electronic artwork.
To avoid unnecessary errors you are strongly advised to use the 'spell-check' and 'grammar-check' functions of your word processor.

Article structure
Introduction
State the objectives of the work and provide an adequate background, avoiding a detailed literature survey or a summary of the results.

Material and methods
Provide sufficient details to allow the work to be reproduced by an independent researcher. Methods that are already published should be summarized, and indicated by a reference. If quoting directly from a previously published method, use quotation marks and also cite the source. Any modifications to existing methods should also be described.

Results
Results should be clear and concise.

Discussion
This should explore the significance of the results of the work, not repeat them. A combined Results and Discussion section is often appropriate. Avoid extensive citations and discussion of published literature.

Conclusions
The main conclusions of the study may be presented in a short Conclusions section, which may stand alone or form a subsection of a Discussion or Results and Discussion section.

Essential title page information
• Title. Concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and formulae where possible. 
• Author names and affiliations. Please clearly indicate the given name(s) and family name(s) of each author and check that all names are accurately spelled. You can add your name between parentheses in your own script behind the English transliteration. Present the authors' affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lower-case superscript letter immediately after the author's name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name and, if available, the e-mail address of each author.
• Corresponding author. Clearly indicate who will handle correspondence at all stages of refereeing and publication, also post-publication. This responsibility includes answering any future queries about Methodology and Materials. Ensure that the e-mail address is given and that contact details are kept up to date by the corresponding author.
• Present/permanent address. If an author has moved since the work described in the article was done, or was visiting at the time, a 'Present address' (or 'Permanent address') may be indicated as a footnote to that author's name. The address at which the author actually did the work must be retained as the main, affiliation address. Superscript Arabic numerals are used for such footnotes.

Highlights
Highlights are optional yet highly encouraged for this journal, as they increase the discoverability of your article via search engines. They consist of a short collection of bullet points that capture the novel results of your research as well as new methods that were used during the study (if any). Please have a look at the examples here: example Highlights.

Highlights should be submitted in a separate editable file in the online submission system. Please use 'Highlights' in the file name and include 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point).
**Abstract**
A concise and factual abstract is required. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

**Graphical abstract**
Authors must supply a graphical abstract at the time the paper is submitted. The abstract should summarize the contents of the paper in a concise, pictorial form designed to capture the attention of a wide readership and for compilation of databases. The graphical abstract is posted online only. Carefully drawn figures that serve to illustrate the theme of the paper are desired. Authors may also provide appropriate text, not exceeding 30 words. The content of the graphical abstract will be typeset and should be kept within an area of 5 cm by 17 cm (189 x 642 pixels), images should have a minimum resolution of 300 dpi and line art should be between 1000dpi and 1200dpi. Authors must supply the graphic separately as an electronic file. For examples of graphical abstracts, please visit the home page of *Journal of Controlled Release* at http://www.sciencedirect.com/science/journal/01683659.

**Keywords**
Immediately after the abstract, provide a maximum of 6 keywords, using American spelling and avoiding general and plural terms and multiple concepts (avoid, for example, 'and', 'of'). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes.

**Abbreviations**
Abbreviations that are unavoidable must be defined at their first use in the manuscript. Ensure consistency of abbreviations throughout the article.

**Acknowledgements**
Collate acknowledgements in a separate section at the end of the article before the references and do not, therefore, include them on the title page, as a footnote to the title or otherwise. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

**Formatting of funding sources**
List funding sources in this standard way to facilitate compliance to funder's requirements:

Funding: This work was supported by the National Institutes of Health [grant numbers xxxx, yyyy]; the Bill & Melinda Gates Foundation, Seattle, WA [grant number zzzz]; and the United States Institutes of Peace [grant number aaaa].

It is not necessary to include detailed descriptions on the program or type of grants and awards. When funding is from a block grant or other resources available to a university, college, or other research institution, submit the name of the institute or organization that provided the funding.

If no funding has been provided for the research, please include the following sentence:

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

**Footnotes**
Footnotes should be used sparingly. Number them consecutively throughout the article. Many word processors build footnotes into the text, and this feature may be used. Should this not be the case, indicate the position of footnotes in the text and present the footnotes themselves separately at the end of the article.

**Electronic artwork**

**General points**
- Make sure you use uniform lettering and sizing of your original artwork.
- Preferred fonts: Arial (or Helvetica), Times New Roman (or Times), Symbol, Courier.
- Number the illustrations according to their sequence in the text.
- Use a logical naming convention for your artwork files.
• Indicate per figure if it is a single, 1.5 or 2-column fitting image.
• For Word submissions only, you may still provide figures and their captions, and tables within a single file at the revision stage.
• Please note that individual figure files larger than 10 MB must be provided in separate source files.

A detailed guide on electronic artwork is available. You are urged to visit this site; some excerpts from the detailed information are given here.

**Formats**
Regardless of the application used, when your electronic artwork is finalized, please 'save as' or convert the images to one of the following formats (note the resolution requirements for line drawings, halftones, and line/halftone combinations given below):

- EPS (or PDF): Vector drawings. Embed the font or save the text as 'graphics'.
- TIFF (or JPG): Color or grayscale photographs (halftones): always use a minimum of 300 dpi.
- TIFF (or JPG): Bitmapped line drawings: use a minimum of 1000 dpi.
- TIFF (or JPG): Combinations bitmapped line/half-tone (color or grayscale): a minimum of 500 dpi is required.

**Please do not:**
- Supply files that are optimized for screen use (e.g., GIF, BMP, PICT, WPG); the resolution is too low.
- Supply files that are too low in resolution.
- Submit graphics that are disproportionately large for the content.

**Color artwork**
Please make sure that artwork files are in an acceptable format (TIFF (or JPEG), EPS (or PDF), or MS Office files) and with the correct resolution. If, together with your accepted article, you submit usable color figures then Elsevier will ensure, at no additional charge, that these figures will appear in color online (e.g., ScienceDirect and other sites) regardless of whether or not these illustrations are reproduced in color in the printed version. **For color reproduction in print, you will receive information regarding the costs from Elsevier after receipt of your accepted article.** Please indicate your preference for color: in print or online only. Further information on the preparation of electronic artwork.

**Figure captions**
Ensure that each illustration has a caption. A caption should comprise a brief title (**not** on the figure itself) and a description of the illustration. Keep text in the illustrations themselves to a minimum but explain all symbols and abbreviations used.

**Tables**
Please submit tables as editable text and not as images. Tables can be placed either next to the relevant text in the article, or on separate page(s) at the end. Number tables consecutively in accordance with their appearance in the text and place any table notes below the table body. Be sparing in the use of tables and ensure that the data presented in them do not duplicate results described elsewhere in the article. Please avoid using vertical rules and shading in table cells.

**References**

**Citation in text**
Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. Unpublished results and personal communications are not recommended in the reference list, but may be mentioned in the text. If these references are included in the reference list they should follow the standard reference style of the journal and should include a substitution of the publication date with either 'Unpublished results' or 'Personal communication'. Citation of a reference as 'in press' implies that the item has been accepted for publication.

**Reference links**
Increased discoverability of research and high quality peer review are ensured by online links to the sources cited. In order to allow us to create links to abstracting and indexing services, such as Scopus, CrossRef and PubMed, please ensure that data provided in the references are correct. Please note that incorrect surnames, journal/book titles, publication year and pagination may prevent link creation. When copying references, please be careful as they may already contain errors. Use of the DOI is highly encouraged.
A DOI is guaranteed never to change, so you can use it as a permanent link to any electronic article. An example of a citation using DOI for an article not yet in an issue is: VanDecar J.C., Russo R.M., James D.E., Ambeh W.B., Franke M. (2003). Aseismic continuation of the Lesser Antilles slab beneath northeastern Venezuela. Journal of Geophysical Research, https://doi.org/10.1029/2001JB000884. Please note the format of such citations should be in the same style as all other references in the paper.

Web references
As a minimum, the full URL should be given and the date when the reference was last accessed. Any further information, if known (DOI, author names, dates, reference to a source publication, etc.), should also be given. Web references can be listed separately (e.g., after the reference list) under a different heading if desired, or can be included in the reference list.

Data references
This journal encourages you to cite underlying or relevant datasets in your manuscript by citing them in your text and including a data reference in your Reference List. Data references should include the following elements: author name(s), dataset title, data repository, version (where available), year, and global persistent identifier. Add [dataset] immediately before the reference so we can properly identify it as a data reference. The [dataset] identifier will not appear in your published article.

References in a special issue
Please ensure that the words ‘this issue’ are added to any references in the list (and any citations in the text) to other articles in the same Special Issue.

Reference management software
Most Elsevier journals have their reference template available in many of the most popular reference management software products. These include all products that support Citation Style Language styles, such as Mendeley. Using citation plug-ins from these products, authors only need to select the appropriate journal template when preparing their article, after which citations and bibliographies will be automatically formatted in the journal’s style. If no template is yet available for this journal, please follow the format of the sample references and citations as shown in this Guide. If you use reference management software, please ensure that you remove all field codes before submitting the electronic manuscript. More information on how to remove field codes from different reference management software.

Users of Mendeley Desktop can easily install the reference style for this journal by clicking the following link:
http://open.mendeley.com/use-citation-style/journal-of-controlled-release
When preparing your manuscript, you will then be able to select this style using the Mendeley plug-ins for Microsoft Word or LibreOffice.

Reference formatting
There are no strict requirements on reference formatting at submission. References can be in any style or format as long as the style is consistent. Where applicable, author(s) name(s), journal title/book title, chapter title/article title, year of publication, volume number/book chapter and the article number or pagination must be present. Use of DOI is highly encouraged. The reference style used by the journal will be applied to the accepted article by Elsevier at the proof stage. Note that missing data will be highlighted at proof stage for the author to correct. If you do wish to format the references yourself they should be arranged according to the following examples:

Reference style
Text: Indicate references by number(s) in square brackets in line with the text. The actual authors can be referred to, but the reference number(s) must always be given.
Example: '..... as demonstrated [3,6]. Barnaby and Jones [8] obtained a different result ....'
List: Number the references (numbers in square brackets) in the list in the order in which they appear in the text.
Examples:
Reference to a journal publication:
Reference to a journal publication with an article number:
Reference to a book:
Reference to a chapter in an edited book:

Reference to a website:

Reference to a dataset:

Journal abbreviations source
Journal names should be abbreviated according to the List of Title Word Abbreviations.

Video
Elsevier accepts video material and animation sequences to support and enhance your scientific research. Authors who have video or animation files that they wish to submit with their article are strongly encouraged to include links to these within the body of the article. This can be done in the same way as a figure or table by referring to the video or animation content and noting in the body text where it should be placed. All submitted files should be properly labeled so that they directly relate to the video file's content. In order to ensure that your video or animation material is directly usable, please provide the file in one of our recommended file formats with a preferred maximum size of 150 MB per file, 1 GB in total. Video and animation files supplied will be published online in the electronic version of your article in Elsevier Web products, including ScienceDirect. Please supply 'stills' with your files: you can choose any frame from the video or animation or make a separate image. These will be used instead of standard icons and will personalize the link to your video data. For more detailed instructions please visit our video instruction pages. Note: since video and animation cannot be embedded in the print version of the journal, please provide text for both the electronic and the print version for the portions of the article that refer to this content.

Data visualization
Include interactive data visualizations in your publication and let your readers interact and engage more closely with your research. Follow the instructions here to find out about available data visualization options and how to include them with your article.

Supplementary material
Supplementary material such as applications, images and sound clips, can be published with your article to enhance it. Submitted supplementary items are published exactly as they are received (Excel or PowerPoint files will appear as such online). Please submit your material together with the article and supply a concise, descriptive caption for each supplementary file. If you wish to make changes to supplementary material during any stage of the process, please make sure to provide an updated file. Do not annotate any corrections on a previous version. Please switch off the 'Track Changes' option in Microsoft Office files as these will appear in the published version.

Research data
This journal encourages and enables you to share data that supports your research publication where appropriate, and enables you to interlink the data with your published articles. Research data refers to the results of observations or experimentation that validate research findings. To facilitate reproducibility and data reuse, this journal also encourages you to share your software, code, models, algorithms, protocols, methods and other useful materials related to the project.

Below are a number of ways in which you can associate data with your article or make a statement about the availability of your data when submitting your manuscript. If you are sharing data in one of these ways, you are encouraged to cite the data in your manuscript and reference list. Please refer to the "References" section for more information about data citation. For more information on depositing, sharing and using research data and other relevant research materials, visit the research data page.

Data linking
If you have made your research data available in a data repository, you can link your article directly to the dataset. Elsevier collaborates with a number of repositories to link articles on ScienceDirect with relevant repositories, giving readers access to underlying data that gives them a better understanding of the research described.
There are different ways to link your datasets to your article. When available, you can directly link your dataset to your article by providing the relevant information in the submission system. For more information, visit the database linking page.

For supported data repositories a repository banner will automatically appear next to your published article on ScienceDirect.

In addition, you can link to relevant data or entities through identifiers within the text of your manuscript, using the following format: Database: xxxx (e.g., TAIR: AT1G01020; CCDC: 734053; PDB: 1XFN).

Mendeley Data
This journal supports Mendeley Data, enabling you to deposit any research data (including raw and processed data, video, code, software, algorithms, protocols, and methods) associated with your manuscript in a free-to-use, open access repository. During the submission process, after uploading your manuscript, you will have the opportunity to upload your relevant datasets directly to Mendeley Data. The datasets will be listed and directly accessible to readers next to your published article online.

For more information, visit the Mendeley Data for journals page.

Data statement
To foster transparency, we encourage you to state the availability of your data in your submission. This may be a requirement of your funding body or institution. If your data is unavailable to access or unsuitable to post, you will have the opportunity to indicate why during the submission process, for example by stating that the research data is confidential. The statement will appear with your published article on ScienceDirect. For more information, visit the Data Statement page.

Additional information
Sources of commercial products need not be listed unless unique. Published methods need not be restated but must be referenced. Where the reference is to papers under review or in press, copies should be provided to the Editor to facilitate review. Full chemical names of drugs/polymers/exipients, etc. should be given. Trade names should not be used. Appropriate statistical analysis of data should be provided.

The Declaration of Helsinki as amended in Fortaleza 2013 for humans, and the European Community guidelines as accepted principles for the use of experimental animals, must be adhered to. Therefore, the Journal of Controlled Release will only consider manuscripts that describe experiments that have been carried out under approval of an institutional or local ethics committee. Authors must state in the manuscript that the protocol complies with the particular recommendation and that approval of their protocols was obtained.

Full chemical names of drugs/polymers/exipients, etc. should be given. Trade names should not be used. Appropriate statistical analysis of data should be provided.

AFTER ACCEPTANCE

Online proof correction
To ensure a fast publication process of the article, we kindly ask authors to provide us with their proof corrections within two days. Corresponding authors will receive an e-mail with a link to our online proofing system, allowing annotation and correction of proofs online. The environment is similar to MS Word: in addition to editing text, you can also comment on figures/tables and answer questions from the Copy Editor. Web-based proofing provides a faster and less error-prone process by allowing you to directly type your corrections, eliminating the potential introduction of errors.

If preferred, you can still choose to annotate and upload your edits on the PDF version. All instructions for proofing will be given in the e-mail we send to authors, including alternative methods to the online version and PDF.

We will do everything possible to get your article published quickly and accurately. Please use this proof only for checking the typesetting, editing, completeness and correctness of the text, tables and figures. Significant changes to the article as accepted for publication will only be considered at this stage with permission from the Editor. It is important to ensure that all corrections are sent back to us in one communication. Please check carefully before replying, as inclusion of any subsequent corrections cannot be guaranteed. Proofreading is solely your responsibility.
Offprints
The corresponding author will, at no cost, receive a customized Share Link providing 50 days free access to the final published version of the article on ScienceDirect. The Share Link can be used for sharing the article via any communication channel, including email and social media. For an extra charge, paper offprints can be ordered via the offprint order form which is sent once the article is accepted for publication. Both corresponding and co-authors may order offprints at any time via Elsevier's Author Services. Corresponding authors who have published their article gold open access do not receive a Share Link as their final published version of the article is available open access on ScienceDirect and can be shared through the article DOI link.

AUTHOR INQUIRIES
Visit the Elsevier Support Center to find the answers you need. Here you will find everything from Frequently Asked Questions to ways to get in touch.
You can also check the status of your submitted article or find out when your accepted article will be published.

© Copyright 2018 Elsevier | https://www.elsevier.com