



TABLE OF CONTENTS

●	Description	p.1
●	Audience	p.1
●	Impact Factor	p.1
●	Abstracting and Indexing	p.2
●	Editorial Board	p.2
●	Guide for Authors	p.5



ISSN: 0041-008X

DESCRIPTION

Toxicology and Applied Pharmacology publishes original scientific research of relevance to animals or humans pertaining to the action of **chemicals, drugs, or chemically-defined natural products**.

Regular articles address **mechanistic approaches** to **physiological, pharmacologic, biochemical, cellular, or molecular understanding** of **toxicologic/pathologic lesions** and to methods used to describe these responses. Safety Science articles address outstanding state-of-the-art preclinical and human translational characterization of drug and chemical safety employing cutting-edge science. Highly significant Regulatory Safety Science articles will also be considered in this category. Papers concerned with alternatives to the use of experimental animals are encouraged.

Short articles report on high impact studies of broad interest to readers of *TAAP* that would benefit from rapid publication. These articles should contain no more than a combined total of four figures and tables. Authors should include in their cover letter the justification for consideration of their manuscript as a short article.

TAAP also issues a standing call for outstanding Invited Review Articles. Potential authors should contact the [Editor-In-Chief](#) and complete an Invited Review Proposal Form before preparing or [submitting](#) their Review Article.

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 pages: <http://support.elsevier.com>

AUDIENCE

Toxicologists, pharmacologists, cancer researchers, epidemiologists, molecular and cell biologists

IMPACT FACTOR

2013: 3.630 © Thomson Reuters Journal Citation Reports 2014

ABSTRACTING AND INDEXING

BIOSIS
Chemical Abstracts
MEDLINE®
International Pharmaceutical Abstracts
Medical Abstracts Newsletter
EMBASE
Research Alert
Safety Science Abstracts
Science Citation Index
Toxicology Abstracts
Current Contents (Life Sciences, Clinical Medicine)
Chemical Hazards Index
Scopus
EMBiology

EDITORIAL BOARD

Editor

Scott W. Burchiel, University of New Mexico, Albuquerque, New Mexico, USA

Associate Editors

Nihal Ahmad, University of Wisconsin at Madison, Madison, Wisconsin, USA
Yasunobu Aoki, National Institute for Environmental Studies, Ibaraki, Japan
Barbara D. Beck, Gradient, Cambridge, Massachusetts, USA
Yongxiao Cao, Xi'an Jiaotong University, Xi'an, China
Sek-Chuen Chow, Monash University Sunway Campus, Selangor Darul Ehsan, Malaysia
Steven D. Cohen, Massachusetts College of Pharmacy and Health Sciences, Worcester, MA, USA
Daniel J. Conklin, University of Louisville School of Medicine, Louisville, Kentucky, USA
George B. Corcoran, Wayne State University (WSU), Detroit, Michigan, USA
Deborah A. Cory-Slechta, University of Rochester Medical Center, Rochester, New York, USA
Max Costa, New York University (NYU) School of Medicine, Tuxedo, New York, USA
John W. Davis II, Pfizer Pharmaceuticals, Cambridge, Massachusetts, USA
Wolfgang Dekant, Julius-Maximilians-Universität Würzburg, Würzburg, Germany
Rakesh Dixit, MedImmune, Inc., Gaithersburg, MD, USA
Jodi A. Flaws, University of Illinois at Urbana-Champaign, Urbana, Illinois, USA
Bruce Fowler, ICF International, Fairfax, Virginia, USA
Donald A. Fox, University of Houston, Houston, Texas, USA
Seishiro Hirano, National Institute for Environmental Studies, Tsukuba-Shi, Ibaraki-Ken, Japan
Patricia B. Hoyer, University of Arizona, Tucson, Arizona, USA
Sam Kacew, University of Ottawa, Ottawa, Ontario, Canada
Georges E.N. Kass, European Food Safety Authority (EFSA), Parma, Italy
William R. Kelce, Leading Edge PharmTox, Durham, North Carolina, USA
M. Firoze Khan, University of Texas Medical Branch, Galveston, USA
Lawrence H. Lash, Wayne State University School of Medicine, Detroit, Michigan, USA
Debra L. Laskin, Rutgers University, Piscataway, USA
Jerold A. Last, University of California, Davis, Sacramento, California, USA
David A. Lawrence, Wadsworth Centre, Albany, New York, USA
Pamela J. Lein, University of California, Davis, Davis, California, USA
Ke Jian (Jim) Liu, University of New Mexico, Albuquerque, New Mexico, USA
José E. Manautou, University of Connecticut, Storrs, Connecticut, USA
Terrence Monks, University of Arizona Health Sciences Center, Tucson, Arizona, USA
Hasan Mukhtar, University of Wisconsin at Madison, Madison, Wisconsin, USA
Jingbo Pi, The Hamner Institutes for Health Sciences, Research Triangle Park, North Carolina, USA
Walter C. Prozialeck, Midwestern University, Downers Grove, Illinois, USA
Betzabet Quintanilla-Vega, Cinvestav, Mexico City, Mexico
Anna A. Shvedova, National Institute for Occupational Safety and Health (NIOSH), Morgantown, West Virginia, USA
Charles Vincent Smith, Seattle Children's Hospital Research Institute, Seattle, Washington, USA
Young-Joon Surh, Seoul National University, Seoul, South Korea
Luis G. Valerio, Jr., Silver Spring, MD, USA
David E. Williams, Oregon State University, Corvallis, Oregon, USA

Editors Emeriti

Edward Bresnick
C. Boyd Shaffer
Gabriel L. Plaa
Robert A. Neal
A. Wallace Hayes
I. Glenn Sipes
Michael P. Waalkes

Founding Editors

Frederick Coulston
Harry W. Hays
Arnold J. Lehman

Editorial Board

Lauren Aleksunes
G.A. Shakeel Ansari
Joseph P. Bressler
Robert L. Bronaugh
Alan R. Buckpitt
Andrew Burdick
Vincent Castranova
Yu Chen
Robert Y.S. Cheng
Mitchell D. Cohen
Paul S. Cooke
Emanuela Corsini
Lawrence R. Curtis
Patrick J. Devine
Daniel R. Dietrich
Xinxin Ding
A. Jay Gandolfi
Vincent F. Garry
Urmila P. Kodavanti
Stephen M. Lasley
Michael A. Lynes
Craig Marcus
Harihara M. Mehendale
David S. Miller
Bhagavatula Moorthy
Virginia (Ginger) C. Moser, Ph.D.
Michael Murray
Daniel J. Noonan
Timothy Nurkiewicz
Shigeru Ohta
Carlos Palmeira
Alan Parrish
Keith Pennypacker
Carey Nat Pope
Stephen B. Pruet
Robert H. Rice
Jim Riviere
Stephen M. Roberts
Allen J. Rosenspire
Robert A. Roth
Di-Yun Ruan
Ivan Rusyn
Konstantin Salnikow
Michael J. Santostefano
Masao Sato
Emily Scott
Timothy J. Shafer
Yogeshwer Shukla
Angela Slitt
J. Christopher States
Lester G. Sultatos
Guifan Sun

**Hollie Swanson
Robert L. Tanguay
David J. Thomas
Todd A. Thompson
Erik Tokar
Mehmet Uzumcu
Richard R. Vaillancourt
Henk Van Loveren
Elizabeth V. Wattenberg
Calvin C. Willhite
Loren Wold
Timothy R. Zacharewski
Helmut Zarbl
Yuxin Zheng**

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.

INTRODUCTION

Toxicology and Applied Pharmacology publishes original scientific research of relevance to animals or humans pertaining to the action of chemicals, drugs, or chemically-defined natural products.

Regular articles address mechanistic approaches to physiological, pharmacologic, biochemical, cellular, or molecular understanding of toxicologic/pathologic lesions and to methods used to describe these responses. Safety Science articles address outstanding state-of-the-art preclinical and human translational characterization of drug and chemical safety employing cutting-edge science. Highly significant Regulatory Safety Science articles will also be considered in this category. Papers concerned with alternatives to the use of experimental animals are encouraged.

Short articles report on high impact studies of broad interest to readers of *TAAP* that would benefit from rapid publication. These articles should contain no more than a combined total of four figures and tables. Authors should include in their cover letter the justification for consideration of their manuscript as a short article.

TAAP also issues a standing call for outstanding Invited Review Articles. Potential authors should contact the Editor-In-Chief and complete an Invited Review Proposal Form before preparing or submitting their Review Article.

Types of Papers

The following types of articles will be considered for publication: Regular Articles, Safety Science Articles, Short High Impact Articles, and Invited Reviews.

Regular articles address mechanistic approaches to physiological, pharmacologic, biochemical, cellular, or molecular understanding of toxicologic/pathologic lesions and to methods used to describe these responses. Regular Articles should be approximately 25 to 35 pages with double line spacing including references but not including figures. Safety Science articles address outstanding state-of-the-art preclinical and human translational characterization of drug and chemical safety employing cutting-edge science. Highly significant Regulatory Safety Science articles will also be considered in this category. Papers concerned with alternatives to the use of experimental animals are encouraged.

Short articles report on high impact studies of broad interest to readers of *Toxicology and Applied Pharmacology* that would benefit from rapid publication. These articles should contain no more than a combined total of four figures and tables and should be approximately 12 to 15 pages with double line spacing including references. Authors should include in their cover letter the justification for consideration of their manuscript as a short article.

Invited Reviews *Toxicology and Applied Pharmacology* also issues a standing call for outstanding Invited Review Articles. Potential authors should contact the Editorial Office (tox@elsevier.com) and complete an Invited Review Proposal Form before preparing or submitting their Review Article.

BEFORE YOU BEGIN

Ethics in publishing

For information on Ethics in publishing and Ethical guidelines for journal publication see <http://www.elsevier.com/publishingethics> and <http://www.elsevier.com/journal-authors/ethics>.

Use of Animals in Experimental Studies

1. All studies involving the use of animals must contain language and, if necessary, support documentation indicating that the studies were conducted in accordance with the laws and regulations of governing authorities. A clear statement regarding approval by the local Institutional Animal Care and Use Committee (IACUC) or equivalent must be made in the Methods Section.
2. It is the policy of TAAP that no pictures of dead or moribund animals will be published in the journal.

Use of humans, human tissues, and clinical trials

1. All studies involving humans or human tissues must be approved by the appropriate Institutional Review Boards (IRB) in accordance with laws and policies of governing authorities. A clear statement regarding the use of humans in studies and the source of human tissues must be made in the Methods Section with appropriate references to Informed Consent and Research Protections, if required by the IRB. Support documentation may also be requested by the journal or its editorial board.

Conflict of interest

Toxicology and Applied Pharmacology follows the ICMJE recommendations regarding conflict of interest disclosures. All authors are required to report the following information with each submission: All third-party financial support for the work in the submitted manuscript. All financial relationships with any entities that could be viewed as relevant to the general area of the submitted manuscript. All sources of revenue with relevance to the submitted work who made payments to you, or to your institution on your behalf, in the 36 months prior to submission. Any other interactions with the sponsor of outside of the submitted work should also be reported. Any relevant patents or copyrights (planned, pending, or issued). Any other relationships or affiliations that may be perceived by readers to have influenced, or give the appearance of potentially influencing, what you wrote in the submitted work.

As a general guideline, it is usually better to disclose a relationship than not. This information will be acknowledged at publication in a Transparency Document. Additional information on the ICMJE recommendations can be found at: <http://www.icmje.org>. The form for conflict of interest disclosure can be downloaded [here](#), or at http://www.icmje.org/coi_disclosure.pdf (if this link does not display properly in your browser, please right-click the link and select "Save Target As..." or "Save Link as..." from the popup menu.)

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 or as part of a published lecture or academic thesis or as an electronic preprint, see <http://www.elsevier.com/postingpolicy>), 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 CrossCheck <http://www.elsevier.com/editors/plagdetect>.

Changes to authorship

This policy concerns the addition, deletion, or rearrangement of author names in the authorship of accepted manuscripts:

Before the accepted manuscript is published in an online issue: Requests to add or remove an author, or to rearrange the author names, must be sent to the Journal Manager from the corresponding author of the accepted manuscript and must include: (a) the reason the name should be added or removed, or the author names rearranged and (b) written confirmation (e-mail, fax, 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. Requests that are not sent by the corresponding author will be forwarded by the Journal Manager to the corresponding author, who must follow the procedure as described above. Note that: (1) Journal Managers will inform the Journal Editors of any such requests and (2) publication of the accepted manuscript in an online issue is suspended until authorship has been agreed.

After the accepted manuscript is published in an online issue: Any requests to add, delete, or rearrange author names in an article published in an online issue will follow the same policies as noted above and 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 about this can be found here: <http://www.elsevier.com/authors/article-transfer-service>.

Copyright

This journal offers authors a choice in publishing their research: Open access and Subscription.

For subscription articles

Upon acceptance of an article, authors will be asked to complete a 'Journal Publishing Agreement' (for more information on this and copyright, see <http://www.elsevier.com/copyright>). 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 (please consult <http://www.elsevier.com/permissions>). 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: please consult <http://www.elsevier.com/permissions>.

For open access articles

Upon acceptance of an article, authors will be asked to complete an 'Exclusive License Agreement' (for more information see <http://www.elsevier.com/OAauthoragreement>). Permitted reuse of open access articles is determined by the author's choice of user license (see <http://www.elsevier.com/openaccesslicenses>).

Retained author rights

As an author you (or your employer or institution) retain certain rights. For more information on author rights for:

Subscription articles please see <http://www.elsevier.com/journal-authors/author-rights-and-responsibilities>.

Open access articles please see <http://www.elsevier.com/OAauthoragreement>.

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.

Funding body agreements and policies

Elsevier has established agreements and developed policies to allow authors whose articles appear in journals published by Elsevier, to comply with potential manuscript archiving requirements as specified as conditions of their grant awards. To learn more about existing agreements and policies please visit <http://www.elsevier.com/fundingbodies>.

US National Institutes of Health (NIH) voluntary posting ("Public Access") policy.

Elsevier facilitates author response to the NIH voluntary posting request (referred to as the NIH "Public Access Policy"; see <http://www.nih.gov/about/publicaccess/index.htm>) by posting the peer-reviewed author's manuscript directly to PubMed Central on request from the author, 12 months after formal publication. Upon notification from Elsevier of acceptance, we will ask you to confirm via e-mail (by e-mailing us at NIHauthorrequest@elsevier.com) that your work has received NIH funding and that you intend to respond to the NIH policy request, along with your NIH award number to facilitate processing. Upon such confirmation, Elsevier will submit to PubMed Central on your behalf a version of your manuscript that will include peer-review comments, for posting 12 months after formal publication. This will ensure that you will have responded fully to the NIH request policy. There will be no need for you to post your manuscript directly with PubMed Central, and any such posting is prohibited.

Open access

This journal offers authors a choice in publishing their research:

Open access

- Articles are freely available to both subscribers and the wider public with permitted reuse
- An open access publication fee is payable by authors or their research funder

Subscription

- Articles are made available to subscribers as well as developing countries and patient groups through our access programs (<http://www.elsevier.com/access>)
- No open access publication fee

All articles published open access will be immediately and permanently free for everyone to read and download. Permitted reuse is defined by your choice of one of the following Creative Commons user licenses:

Creative Commons Attribution (CC BY): lets others distribute and copy the article, to create extracts, abstracts, and other revised versions, adaptations or derivative works of or from an article (such as a translation), to include in a collective work (such as an anthology), to text or data mine the article, even for commercial purposes, as long as they credit the author(s), do not represent the author as endorsing their adaptation of the article, and do not modify the article in such a way as to damage the author's honor or reputation.

Creative Commons Attribution-NonCommercial-ShareAlike (CC BY-NC-SA): for non-commercial purposes, lets others distribute and copy the article, to create extracts, abstracts and other revised versions, adaptations or derivative works of or from an article (such as a translation), to include in a collective work (such as an anthology), to text and data mine the article, as long as they credit the author(s), do not represent the author as endorsing their adaptation of the article, do not modify the article in such a way as to damage the author's honor or reputation, and license their new adaptations or creations under identical terms (CC BY-NC-SA).

Creative Commons Attribution-NonCommercial-NoDerivs (CC BY-NC-ND): for non-commercial purposes, lets others distribute and copy the article, and to include in a collective work (such as an anthology), as long as they credit the author(s) and provided they do not alter or modify the article.

To provide open access, this journal has a publication fee which needs to be met by the authors or their research funders for each article published open access.

Your publication choice will have no effect on the peer review process or acceptance of submitted articles.

The open access publication fee for this journal is **\$3000**, excluding taxes. Learn more about Elsevier's pricing policy: <http://www.elsevier.com/openaccesspricing>.

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://support.elsevier.com>) for more information.

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.

Should you be unable to provide an electronic version, please contact the editorial office prior to submission at e-mail: tox@elsevier.com; telephone: +1 (619) 699-6275; or fax: +1 (619) 699-6211.

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 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.

Please ensure the text of your paper is double-spaced and has consecutive line numbering– this is an essential peer review requirement.

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.

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: <http://www.elsevier.com/guidepublication>). 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

Preparation of Manuscript.

Manuscripts text should have double line spacing and references should be single-spaced. Pages should be numbered consecutively and organized as follows:

The title Page (p. 1) should contain the article title, authors' names and complete affiliations, footnotes to the title, and the address for manuscript correspondence (including e-mail address and telephone and fax numbers). The article title should be comprehensive and descriptive: proprietary names must not be used in titles, but may be identified in footnotes.

Page 2 should contain an abstract. The abstract should be limited to 250 words but must contain a concise summary of what was done, the results obtained, and valid conclusions which are drawn therefrom. It must mention the compounds or families of compounds studied, their actions, and the species of animals. It must contain important words which are used as index terms, but not proprietary names. Keywords should be listed immediately after the abstract.

Format. The following text sections should be used. Introduction. State why the investigation was carried out, note any relevant published work, and delineate the objective of the investigation.

Methods. New methods or significant improvements of methods or changes in old methods must be described. Methods for which adequate reference can be cited are not to be described. In the Methods section, authors should draw attention to any particular chemical or biological hazards that may be involved in carrying out the experiments described. Any relevant safety precautions should be described: if an accepted code of practice has been followed, a reference to the relevant standards should be given. Details regarding animal housing conditions should be given.

Results. Duplication between the text of this section and material presented in tables and figures should be avoided. Tabular presentation of masses of negative data must be avoided and replaced with a statement in the text whenever possible. The statement must include (a) what was done, (b) how it was done, (c) how the data were analyzed, (d) a measure of variability, and (e) the significance of the result.

Discussion. This section must relate to the significance of the work to existing knowledge in the field and indicate the importance of the contribution of this study. Needless detailed recapitulation of the results must be avoided. Unsupported hypotheses and speculation should be omitted.

Subdivision - unnumbered sections

Divide your article into clearly defined sections. Each subsection is given a brief heading. Each heading should appear on its own separate line. Subsections should be used as much as possible when cross-referencing text: refer to the subsection by heading as opposed to simply 'the text'.

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 detail to allow the work to be reproduced. Methods already published should be indicated by a reference: only relevant modifications should be described.

Authors should draw attention to any particular chemical or biological hazards that may be involved in carrying out the experiments described. Any relevant safety precautions should be described: if an accepted code of practice has been followed, a reference to the relevant standards should be given. Details regarding animal housing should also be noted.

Results

Results should be clear and concise.

Duplication between the text of this section and material presented in tables and figures should be avoided and replaced with a statement in the text whenever possible. The statement must include (a) what was done, (b) how it was done, (c) how the data were analyzed, (d) a measure of variability, and (e) the significance of the result.

Discussion

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

Needless detailed recapitulation of the results must be avoided. Unsupported hypotheses and speculation should also be omitted.

Appendices

If there is more than one appendix, they should be identified as A, B, etc. Formulae and equations in appendices should be given separate numbering: Eq. (A.1), Eq. (A.2), etc.; in a subsequent appendix, Eq. (B.1) and so on. Similarly for tables and figures: Table A.1; Fig. A.1, etc.

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.** Where the family name may be ambiguous (e.g., a double name), please indicate this clearly. 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. **Ensure that phone numbers (with country and area code) are provided in addition to the e-mail address and the complete postal address. Contact details must be 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.

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.

The abstract should be limited to 250 words. It must mention the compounds or families of compounds studied, their actions, and the species of animals, but must not contain proprietary names.

Graphical abstract

Although a graphical abstract is optional, its use is encouraged as it draws more attention to the online article. The graphical abstract should summarize the contents of the article in a concise, pictorial form designed to capture the attention of a wide readership. Graphical abstracts should be submitted as a separate file in the online submission system. Image size: Please provide an image with a minimum of 531 × 1328 pixels (h × w) or proportionally more. The image should be readable at a size of 5 × 13 cm using a regular screen resolution of 96 dpi. Preferred file types: TIFF, EPS, PDF or MS Office files. See <http://www.elsevier.com/graphicalabstracts> for examples.

Authors can make use of Elsevier's Illustration and Enhancement service to ensure the best presentation of their images and in accordance with all technical requirements: [Illustration Service](#).

Highlights

Highlights are mandatory for this journal. They consist of a short collection of bullet points that convey the core findings of the article and 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). See <http://www.elsevier.com/highlights> for examples.

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

Define abbreviations that are not standard in this field in a footnote to be placed on the first page of the article. Such abbreviations that are unavoidable in the abstract must be defined at their first mention there, as well as in the footnote. 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.).

Units will be in general accordance with the International System (SI) as adopted by the 11th General Conference on Weights and Measures. Common abbreviations to be used in this journal are:

m meter
ppm parts per million
cm centimeter
cpm counts per minute
mm millimeter
dpm disintegrations per minute

um micrometer
sc subcutaneous
nm nanometer
ic intracutaneous
kg kilogram
im intramuscular
g gram
ip intraperitoneal
mg milligram iv intravenous
ug microgram
po oral
ng nanogram
LD50 medial lethal dose
ml milliliter
LC50 medial lethal concentration
>ul microliter
Hz hertz mol mole
s seconds
M molar
min minutes
mM millimolar
h hours
uM micromolar
SD standard deviation
N normal
SE standard error
Ci Curie TLV threshold limit value
X mean

Database linking

Elsevier encourages authors to connect articles with external databases, giving their readers one-click access to relevant databases that help to build a better understanding of the described research. Please refer to relevant database identifiers using the following format in your article: Database: xxxx (e.g., TAIR: AT1G01020; CCDC: 734053; PDB: 1XFN). See <http://www.elsevier.com/databaselinking> for more information and a full list of supported databases.

Math formulae

Please submit math equations as editable text and not as images. Present simple formulae in line with normal text where possible and use the solidus (/) instead of a horizontal line for small fractional terms, e.g., X/Y. In principle, variables are to be presented in italics. Powers of e are often more conveniently denoted by exp. Number consecutively any equations that have to be displayed separately from the text (if referred to explicitly in the text).

Proprietary names of substances and names and addresses of suppliers should be identified in footnotes. If the paper has been presented orally in whole or part, the date, and occasion should be included in a footnote.

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.

Artwork

Image manipulation

Whilst it is accepted that authors sometimes need to manipulate images for clarity, manipulation for purposes of deception or fraud will be seen as scientific ethical abuse and will be dealt with accordingly. For graphical images, this journal is applying the following policy: no specific feature within an image may be enhanced, obscured, moved, removed, or introduced. Adjustments of brightness, contrast, or color balance are acceptable if and as long as they do not obscure or eliminate any information present in the original. Nonlinear adjustments (e.g. changes to gamma settings) must be disclosed in the figure legend.

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 on our website:

<http://www.elsevier.com/artworkinstructions>.

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. For further information on the preparation of electronic artwork, please see <http://www.elsevier.com/artworkinstructions>.

Please note: Because of technical complications that can arise by converting color figures to 'gray scale' (for the printed version should you not opt for color in print) please submit in addition usable black and white versions of all the color illustrations.

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.

References

Unpublished results or personal communications should be cited as such in the text.

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 and a copy of the title page of the relevant article must be submitted.

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 encouraged.

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.

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

This journal has standard templates available in key reference management packages EndNote (<http://www.endnote.com/support/enstyles.asp>) and Reference Manager (<http://refman.com/support/rmstyles.asp>). Using plug-ins to wordprocessing packages, authors only need to select the appropriate journal template when preparing their article and the list of references and citations to these will be formatted according to the journal style which is described below.

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 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: All citations in the text should refer to:

1. *Single author:* the author's name (without initials, unless there is ambiguity) and the year of publication;
2. *Two authors:* both authors' names and the year of publication;
3. *Three or more authors:* first author's name followed by 'et al.' and the year of publication.

Citations may be made directly (or parenthetically). Groups of references should be listed first alphabetically, then chronologically.

Examples: 'as demonstrated (Allan, 2000a, 2000b, 1999; Allan and Jones, 1999). Kramer et al. (2010) have recently shown'

List: References should be arranged first alphabetically and then further sorted chronologically if necessary. More than one reference from the same author(s) in the same year must be identified by the letters 'a', 'b', 'c', etc., placed after the year of publication.

Examples:

Reference to a journal publication:

Van der Geer, J., Hanraads, J.A.J., Lupton, R.A., 2010. The art of writing a scientific article. *J. Sci. Commun.* 163, 51–59.

Reference to a book:

Strunk Jr, W., White, E.B., 2000. *The Elements of Style*, fourth ed. Longman, New York.

Reference to a chapter in an edited book:

Mettam, G.R., Adams, L.B., 2009. How to prepare an electronic version of your article, in: Jones, B.S., Smith, R.Z. (Eds.), *Introduction to the Electronic Age*. E-Publishing Inc., New York, pp. 281–304.

Journal abbreviations source

Journal names should be abbreviated according to the List of Title Word Abbreviations: <http://www.issn.org/services/online-services/access-to-the-ltwa/>.

Video data

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 files in one of our recommended file formats with a preferred maximum size of 50 MB. Video and animation files supplied will be published online in the electronic version of your article in Elsevier Web products, including ScienceDirect: <http://www.sciencedirect.com>. 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 at <http://www.elsevier.com/artworkinstructions>. 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.

AudioSlides

The journal encourages authors to create an AudioSlides presentation with their published article. AudioSlides are brief, webinar-style presentations that are shown next to the online article on ScienceDirect. This gives authors the opportunity to summarize their research in their own words and to help readers understand what the paper is about. More information and examples are available at <http://www.elsevier.com/audioslides>. Authors of this journal will automatically receive an invitation e-mail to create an AudioSlides presentation after acceptance of their paper.

Supplementary data

Elsevier accepts electronic supplementary material to support and enhance your scientific research. Supplementary files offer the author additional possibilities to publish supporting applications, high-resolution images, background datasets, sound clips and more. Supplementary files supplied will be published online alongside the electronic version of your article in Elsevier Web products, including ScienceDirect: <http://www.sciencedirect.com>. In order to ensure that your submitted material is directly usable, please provide the data in one of our recommended file formats. Authors should submit the material in electronic format together with the article and supply a concise and descriptive caption for each file. For more detailed instructions please visit our artwork instruction pages at <http://www.elsevier.com/artworkinstructions>.

Submission checklist

The following list will be useful during the final checking of an article prior to sending it to the journal for review. Please consult this Guide for Authors for further details of any item.

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
- Telephone

All necessary files have been uploaded, and contain:

- Keywords
- All figure captions
- All tables (including title, description, footnotes)

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)

Printed version of figures (if applicable) in color or black-and-white

- Indicate clearly whether or not color or black-and-white in print is required.
- For reproduction in black-and-white, please supply black-and-white versions of the figures for printing purposes.

For any further information please visit our customer support site at <http://support.elsevier.com>.

AFTER ACCEPTANCE

Use of the Digital Object Identifier

The Digital Object Identifier (DOI) may be used to cite and link to electronic documents. The DOI consists of a unique alpha-numeric character string which is assigned to a document by the publisher upon the initial electronic publication. The assigned DOI never changes. Therefore, it is an ideal medium for citing a document, particularly 'Articles in press' because they have not yet received their full bibliographic information. Example of a correctly given DOI (in URL format; here an article in the journal *Physics Letters B*):

<http://dx.doi.org/10.1016/j.physletb.2010.09.059>

When you use a DOI to create links to documents on the web, the DOIs are guaranteed never to change.

Proofs

One set of page proofs (as PDF files) will be sent by e-mail to the corresponding author (if we do not have an e-mail address then paper proofs will be sent by post) or, a link will be provided in the e-mail so that authors can download the files themselves. Elsevier now provides authors with PDF proofs which can be annotated; for this you will need to download Adobe Reader version 9 (or higher) available free from <http://get.adobe.com/reader>. Instructions on how to annotate PDF files will accompany the proofs (also given online). The exact system requirements are given at the Adobe site: <http://www.adobe.com/products/reader/tech-specs.html>.

If you do not wish to use the PDF annotations function, you may list the corrections (including replies to the Query Form) and return them to Elsevier in an e-mail. Please list your corrections quoting line number. If, for any reason, this is not possible, then mark the corrections and any other comments (including replies to the Query Form) on a printout of your proof and return by fax, or scan the pages and e-mail, or by post. 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. We will do everything possible to get your article published quickly and accurately. 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, at no cost, will be provided with a personalized link providing 50 days free access to the final published version of the article on [ScienceDirect](http://www.sciencedirect.com). This link can also be used for sharing via email and social networks. 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 WebShop (<http://webshop.elsevier.com/myarticleservices/offprints>). Authors requiring printed copies of multiple articles may use Elsevier WebShop's 'Create Your Own Book' service to collate multiple articles within a single cover (<http://webshop.elsevier.com/myarticleservices/booklets>).

AUTHOR INQUIRIES

You can track your submitted article at http://help.elsevier.com/app/answers/detail/a_id/89/p/8045/. You can track your accepted article at <http://www.elsevier.com/trackarticle>. You are also welcome to contact Customer Support via <http://support.elsevier.com>.

© Copyright 2014 Elsevier | <http://www.elsevier.com>