



FREE RADICAL BIOLOGY & MEDICINE

An official Journal of the [Society for Free Radical Biology and Medicine](#)
An official Journal of the [Society for Free Radical Research-Europe](#)

An Affiliate Journal of the [International Society for Free Radical Research \(SFRR\)](#)

AUTHOR INFORMATION PACK

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: 0891-5849

DESCRIPTION

Free Radical Biology and Medicine is an international, interdisciplinary journal that publishes original contributions and reviews on a broad range of topics relating to **redox biology, signaling, biological chemistry** and medical implications of **free radicals, reactive species, oxidants** and **antioxidants**.

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

Biochemists, physiologists, pathologists, toxicologists.

IMPACT FACTOR

2013: 5.710 © Thomson Reuters Journal Citation Reports 2014

ABSTRACTING AND INDEXING

ADONIS
BIOSIS
Elsevier BIOBASE
Cambridge Scientific Abstracts
Chemical Abstracts
Current Contents
MEDLINE®
EMBASE
Science Citation Index
Toxicology Abstracts
Scopus
EMBiology

EDITORIAL BOARD

Editor in Chief

Kelvin J. A. Davies, University of Southern California, Los Angeles, California, USA

Review Editor

Giovanni Mann, King's College London, London, UK

Associate Editors

Ohara Augusto, Universidade de São Paulo (USP), Sao Paulo - SP, Brazil

Regina Brigelius-Flohe, German Institute of Human Nutrition (DIfE) Potsdam-Rehbrücke, Nuthetal, Germany

Enrique Cadenas, University of Southern California, Los Angeles, California, USA

Phyllis Dennery, University of Pennsylvania, Philadelphia, Pennsylvania, USA

Henry Jay Forman, University of Southern California, Los Angeles, California, USA

Harry Ischiropoulos, University of Pennsylvania, Philadelphia, Pennsylvania, USA

Giuseppe Poli, University of Torino, Turin, Italy

Rafael Radi, Universidad de la República, Montevideo, Uruguay

José Viña, Universitat de València, Valencia, Spain

Distinguished Editorial Board

Bruce Ames, University of California at Berkeley, Oakland, California, USA

Irwin Fridovich, Duke University, Durham, North Carolina, USA

Louis Ignarro, UCLA Health System, Los Angeles, California, USA

Michael Karin, University of California at San Diego (UCSD), La Jolla, California, USA

Salvador Moncada, University of Manchester, Manchester, UK

Etsuo Niki, MD, Human Stress Signal Research Center, Osaka, Japan

Sten Orrenius, Karolinska Institutet, Stockholm, Sweden

Sue-Goo Rhee, Yonsei University College of Medicine, Seoul, South Korea

Joan Selverstone Valentine, University of California at Los Angeles, Los Angeles, California, USA

Helmut Sies, Heinrich-Heine-Universität Düsseldorf, Düsseldorf, Germany

Christine Winterbourn, Christchurch School of Medicine, Christchurch, New Zealand

Junji Yodoi, Kyoto University, Kawahara-cho, Sakyo-ku, Kyoto, Japan

International Editorial Board

Julie Andersen, Buck Institute for Age Research, Novato, California, USA

Shannon Bailey, University of Alabama at Birmingham, Birmingham, Alabama, USA

Grzegorz Bartosz, University of Lodz, Lodz, Poland

Joseph Beckman, Oregon State University, Corvallis, Oregon, USA

Marcelo Bonini, University of Illinois at Chicago, Chicago, Illinois, USA

George Booz, University of Mississippi, Jackson, Mississippi, USA

Ralf Brandes, Goethe-Universität Frankfurt, Frankfurt, Germany

Paul Brookes, University of Rochester Medical Center, Rochester, New York, USA

Garry Buettner, University of Iowa, Iowa City, Iowa, USA

Allan Butterfield, University of Kentucky, Lexington, Kentucky, USA

Jean Cadet, Université de Sherbrooke, Sherbrooke, Canada

Arthur Cederbaum, Mount Sinai School of Medicine, New York, New York, USA

Fong-Fong Chu, Beckman Research Institute of the City of Hope, Duarte, California, USA

Richard Cohen, Boston University School of Medicine, Boston, Massachusetts, USA

Dana Crawford, Albany Medical College, Albany, New York, USA

Carroll Cross, University of California, Davis, Davis, California, USA
Michael Davies, The Panum Institute, Copenhagen, Denmark
Ana Denicola, Universidad de la República, Montevideo, Uruguay
Dale Dickinson, University of Alabama at Birmingham, Birmingham, Alabama, USA
Frederick Domann, University of Iowa, Iowa, USA
Philip Eaton, King's College London, London, England, UK
Michael Espey, National Cancer Institute (NCI), Bethesda, Maryland, USA
Gerardo Ferrer-Sueta, Universidad de la República, Montevideo, Uruguay
Cesar Fraga, Universidad de Buenos Aires, Buenos Aires, Argentina
Balz Frei, Oregon State University, Corvallis, Oregon, USA
Bertrand Friguet, Universite Pierre et Marie Curie (UPMC), Paris, France
Cecilia Giulivi, University of California, Davis, Davis, California, USA
Mark Gladwin, University of Pittsburgh Medical Center (UPMC), Pittsburgh, Pennsylvania, USA
Kathy Griendling, Emory University, Atlanta, Georgia, USA
Tilman Grune, German Institute of Human Nutrition, Nuthetal, Germany
Stanley Hazen, Cleveland Clinic Foundation, Cleveland, Ohio, USA
Bradford Guy Hill, University of Louisville, Louisville, Kentucky, USA
Neil Hogg, Medical College of Wisconsin, Milwaukee, Wisconsin, USA
Arne Holmgren, Karolinska Institutet, Stockholm, Sweden
James Hurst, Washington State University, Pullman, Washington, USA
Tetsuro Ishii, University of Tsukuba, Tsukuba, Japan
Malcolm Jackson, University of Liverpool, Liverpool, England, UK
Yvonne Janssen-Heininger, University of Vermont, Burlington, Vermont, USA
Li Li Ji, University of Minnesota, Minneapolis, Minnesota, USA
David Jourd'heuil, Albany Medical College, Albany, New York, USA
John Keaney, UMass Medical School, Worcester, Massachusetts, USA
Tony Kettle, University of Otago, Christchurch, New Zealand
Christopher Kevil, Louisiana State University (LSU) Health Sciences Center, Shreveport, Louisiana, USA
Lars-Oliver Klotz, Friedrich Schiller University of Jena, Jena, Germany
Alicia Kowaltowski, Universidade de São Paulo (USP), Sao Paulo - SP, Brazil
Santiago Lamas, Centro de Biología Molecular Severo Ochoa, Madrid, Spain
David Lambeth, Emory University Medical School, Atlanta, Georgia, USA
Jack R. Lancaster, University of Alabama at Birmingham, Birmingham, Alabama, USA
Aimee Landar, University of Alabama at Birmingham, Birmingham, Alabama, USA
João Laranjinha, Universidade de Coimbra, Coimbra, Portugal
Francesco Laurindo, Universidade de São Paulo (USP), Sao Paulo, Brazil
Anna-Liisa Levonen, University of Eastern Finland, Kuopio, Finland
Matilde Maiorino, University of Padova, Padua, Italy
Danny Manor, Case Western Reserve University, Cleveland, Ohio, USA
Ronald Mason, National Institute of Environmental Health Sciences (NIEHS), Research Triangle Park, North Carolina, USA
Anne McArdle, University of Liverpool, Liverpool, England, UK
Joe McCord, University of Colorado, Aurora, Colorado, USA
Andres Melendez, Albany Medical College, Albany, New York, USA
Ginger Lohr Milne, Vanderbilt University, Nashville, Tennessee, USA
Mike Murphy, MRC Mitochondrial Biology Unit, Cambridge, UK
Richard Naftalin, King's College London, London, UK
Patricia Oteiza, University of California, Davis, Davis, California, USA
Pal Pacher, National Institutes of Health (NIH), Rockville, Maryland, USA
Patrick Pagano, University of Pittsburgh, Pittsburgh, Pennsylvania, USA
Federico Pallardo, Universitat de València, Valencia, Spain
Manisha Patel, University of Colorado, Aurora, Colorado, USA
Rakesh Patel, University of Alabama at Birmingham, Birmingham, Alabama, USA
George Perry, University of Texas at San Antonio, San Antonio, Texas, USA
Claude Piantadosi, Duke University Medical Center, Durham, North Carolina, USA
Leslie Poole, Wake Forest University, Winston-Salem, North Carolina, USA
Henrik Poulsen, Copenhagen University Hospital, Copenhagen, Denmark
Juan Sastre, Universitat de València, Valencia, Spain
Christian Schoneich, University of Kansas, Lawrence, Kansas, USA
Paul Schumacker, Northwestern University, Chicago, Illinois, USA
Corinne Spickett, Aston University, Birmingham, UK
Douglas Spitz, University of Iowa, Iowa City, Iowa, USA
Daret St. Clair, University of Kentucky, Lexington, Kentucky, USA
Krisztian Stadler, Louisiana State University, Baton Rouge, Louisiana, USA
Roland Stocker, Victor Chang Cardiac Research Institute, Sydney, New South Wales, Australia
Maret Traber, Oregon State University, Corvallis, Oregon, USA
Koji Uchida, Nagoya University, Nagoya, Japan

Fulvio Ursini, Università degli Studi di Padova, Padova, Italy
Albert van der Vliet, University of Vermont, Burlington, Vermont, USA
Jeannette Vasquez-Vivar, Medical College of Wisconsin, Milwaukee, Wisconsin, USA
Carl White, National Jewish Medical and Research Center, Denver, Colorado, USA
Jacek Zielonka, Medical College of Wisconsin, Milwaukee, Wisconsin, USA

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

Free Radical Biology & Medicine is an international, interdisciplinary journal that publishes original contributions and reviews on a broad range of topics relating to redox biology, signaling, biological chemistry and medical implications of free radicals, reactive species, oxidants and antioxidants.

Types of paper

Full-length research articles, Review articles, Hypothesis papers, Methods articles and Letters to the Editor.

Original Articles: Original articles are the normal medium of publication. Although there is no fixed length, articles should be as concise as possible, while providing sufficient information for the work to be repeated and for the claims of the authors to be judged by the readers.

Reviews: These are contributed by scientists who are leading specialists in their field of expertise, normally at the invitation of the Editors. Authors wishing to contribute a review paper are advised first to contact the Reviews Editor, Dr. Henry Forman. Please e-mail the outline and abstract of the proposed review to frbm@elsevier.com before submission.

Letters to the Editor: Letters to the Editor are intended to stimulate discussion and debate in areas of general concern and controversy in free radical and oxidant research, and generally reflect the personal opinions of the author(s). They should be written in a continuous style and should normally not exceed two printed pages and contain no more than one figure and table.

Critical Methods: Authors wishing to contribute a Critical Methods paper are advised first to contact the Editor, Dr. Henry Forman. Please e-mail the outline and abstract of the proposed manuscript to frbm@elsevier.com before uploading the submission. These papers are contributed by scientists who are leading specialists in their field of expertise, normally at the invitation of the Editors. Critical Methods papers must conform to a strict format. Abstract: In 200 words or less, state why this is the appropriate method to use, the general method type (HPLC, Elisa, enzymatic assay, etc.) and the instrumentation (UV detector, Plate reader, UV spectrophotometer, etc.). Introduction: Background of methodology. Provide example of the use of the method. If other methods are flawed, briefly explain the problem with them. Principles: Explain the chemical and/or biological basis of the method. Describe what the assay does and does not mean. For example, many molecular biology measurements provide relative changes rather than absolute values. Another example, is that the usual spectrofluorimetric determination of intracellular calcium concentration is an average among cells that does not indicate individual cells and does not account for gradients within cells. Materials: Provide a detailed list of every reagent. Include source and catalog number. Instrumentation: Describe the required instrument(s)? For example, for spectrophotometer, a double beam spectrophotometer and for HPLC, specific detector, gradient mixer, etc. An actual model number and the vendor, etc. should be included. Protocol: Describe in detail each step. This can be divided into subsections. For example, for electrophoretic mobility assays, extraction of nuclear proteins would be a section and gel electrophoresis would be another. If there are multiple buffer solutions, each could also be a separate section. Indicate the minimum (and maximum if needed) concentration of percent change that is required for the assay to produce significant results. Indicate the timing of steps including any waiting periods. Provide representative illustrations of steps where useful. If there are steps where particular care must be paid that are not obvious (for example, making sure a sample is placed into a well below the buffer using a long thin pipette) this should be in bold lettering. Precautions should also be in bold for any steps where something can easily go wrong. Calculations and Expected Results: Describe any post protocol calculations in detail. Provide representative results. Caveats: Describe any caveats that need to be considered. Acknowledgements Section (self explanatory). Conflict of

Interest: State if the authors have patents or financial interests in the protocol or instruments." **In light of the special structure and format of these sorts of papers, the 'Your Paper Your Way' submission option is not available for Critical Methods papers.**

Contact details for submission

Papers should be submitted using the *Free Radical Biology & Medicine* online submission system, <http://ees.elsevier.com/frbm> For questions on the submission or reviewing process, please contact the Editorial Office at frbm@elsevier.com

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>.

Policy and ethics

The work described in your article must have been carried out in accordance with *The Code of Ethics of the World Medical Association (Declaration of Helsinki) for experiments involving humans* <http://www.wma.net/en/30publications/10policies/b3/index.html>; *Uniform Requirements for manuscripts submitted to Biomedical journals* <http://www.icmje.org>. This must be stated at an appropriate point in the article.

Animal experiments

Where animals have been used in a study, the institutional ethical or animal welfare Authority under which the work was conducted must be stated, along with the specific authorisation reference number. Circumstances relating to animal experimentation must meet the *International Guiding Principles for Biomedical Research Involving Animals*, as issued by the Council for the International Organizations of Medical Sciences. These guidelines are obtainable from: Executive Secretary C.I.O.M.S., c/o WHO, Appia, CH-1211 Geneva 27, Switzerland, or at the following URL: http://www.cioms.ch/frame_1985_texts_of_guidelines.htm, or the *EC Directive 86/609/EEC for animal experiments* http://ec.europa.eu/environment/chemicals/lab_animals/legislation_en.htm.

Conflict of interest

All authors are requested to disclose any actual or potential conflict of interest including any financial, personal or other relationships with other people or organizations within three years of beginning the submitted work that could inappropriately influence, or be perceived to influence, their work. See also <http://www.elsevier.com/conflictsofinterest>. Further information and an example of a Conflict of Interest form can be found at: http://help.elsevier.com/app/answers/detail/a_id/286/p/7923.

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>.

Authorship

All authors should have made substantial contributions to all of the following: (1) the conception and design of the study, or acquisition of data, or analysis and interpretation of data, (2) drafting the article or revising it critically for important intellectual content, (3) final approval of the version to be submitted.

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.

Copyright

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 third party reuse of open access articles is determined by the author's choice of user license (see <http://www.elsevier.com/openaccesslicenses>).

Author rights

As an author you (or your employer or institution) have certain rights to reuse your work. For more information on author rights for (a) subscription articles please see <http://www.elsevier.com/journal-authors/author-rights-and-responsibilities>; (b) for 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 a number of agreements with funding bodies which allow authors to comply with their funder's open access policies. Some authors may also be reimbursed for associated publication fees. To learn more about existing agreements please visit <http://www.elsevier.com/fundingbodies>.

Elsevier journals comply with current NIH public access policy.

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 on their behalf e.g. by their research funder or institution

Subscription

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

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

For open access articles, permitted third party (re)use is defined by the following Creative Commons user licenses:

Creative Commons Attribution (CC BY)

Lets others distribute and copy the article, create extracts, abstracts, and other revised versions, adaptations or derivative works of or from an article (such as a translation), include in a collective work (such as an anthology), 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-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.

The open access publication fee in this journal is **\$2200**, 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.

Your Paper-Your Way

As part of the Your Paper-Your Way service, authors may submit a PDF version of their manuscript for use in the refereeing process. This PDF file can be in any format or lay-out that can be used by referees to evaluate your work. It should contain high enough quality figures for refereeing. References can be in any style or format, as long as the full paper title is present. After revision, at acceptance, source files of the paper, figures, tables and figure captions will then be required to produce the final published version - not before.

Submission in the traditional way is also still possible.

Submission

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 source files to a single PDF file of the article, which is used in the peer-review process (see above). Please note that even though manuscript source files are converted to PDF files at submission for the review process, these source files are needed for further processing after acceptance. All correspondence, including notification of the Editor's decision and requests for revision, takes place by e-mail removing the need for a paper trail.

Submit your article

Please submit your article via <http://ees.elsevier.com/frbm>

Referees

A minimum of four suitable potential reviewers (please provide their name, email addresses, and institutional affiliation) should be provided. When compiling this list of potential reviewers please consider the following important criteria: they must be knowledgeable about the manuscript subject area; must not be from your own institution; at least two of the suggested reviewers should be from another country than the authors'; and they should not have recent (less than four years) joint publications with any of the authors. However, the final choice of reviewers is at the editors' discretion.

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.

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

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, with details of supplier and catalogue number when appropriate. Methods already published should be indicated by a reference: only relevant modifications should 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.** 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.

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](#).

The Editors strongly encourage graphical abstracts and suggest that amongst the examples given <http://www.elsevier.com/graphicalabstracts>, that example 11 and 12 best reflect the sort of graphical abstract most suited to this field and journal.

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

Following the abstract, list keywords for indexing. These keywords should cover precisely the contents of the submitted paper and should give readers sufficient information as to the relevance of the paper to their particular field.

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.).

Nomenclature and abbreviations

Stylistic details must be kept constant. For example, electron spin resonance is abbreviated either ESR or EPR (for electron paramagnetic resonance). Either can be used, but both should be given and stated as equivalent at the first mention. (This is the recommendation of the International EPR Society.) Formulas for radicals follow IUPAC recommendations and contain a superscripted (not centered) large dot that precedes a charge, if any. Thus, superoxide is represented by $O_2^{\bullet -}$, not $O_2^- \bullet$, or some other permutation.

Other examples are HO^{\bullet} or $^{\bullet}OH$ (not OH^{\bullet}), RO^{\bullet} , $ROO^{\bullet}/^{\bullet}NO_2$, $^{\bullet}CH_2OH$, etc. In the text, names of radicals are preferred, rather than using formulas in the middle of sentences. For names of radicals, use alkoxy, peroxy, and hydroxyl and not alkoxy, peroxy, etc. (correct nomenclature requires the 'l' on the end of radicals, as in methyl, hydroxyl, etc.). Use tert, not t-, etc., for abbreviations. For example, CORRECT: tert-butoxy, sec-peroxy; INCORRECT: t-butoxy, s-peroxy.

Wherever possible, nomenclature and abbreviations should be in accordance with internationally agreed rules. When an enzyme or compound is first mentioned in the text, specification by its code number accompanied by its systematic name (as distinct from its trivial name) is requested by the Editors, but not checked for correctness.

Official names of drugs are preferred to trade names.

Standard three-letter codes for the common amino acids may be used freely and without definition, but the one-letter codes should be restricted to comparisons of long protein sequences. Similar considerations apply to nucleosides and nucleotides. Standard three-letter codes for carbohydrates and for purine and pyrimidine bases may also be used. All other abbreviations should be defined when they first appear in the text. If an extensive list of abbreviations is used, please provide an alphabetical list with definitions followed by the references at the end of the article.

Temperatures denoted by an unqualified degree symbol are assumed to be Celsius. For solution strengths, percentages should be expressed by the sign %, followed in cases of ambiguity by w/w, w/v, or v/v [e.g., 5% (w/v) means 5 g/100 ml].

All non-standard abbreviations should be defined in a footnote.

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.

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.

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

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.

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

Type references double-spaced and number them consecutively in the order in which they are first mentioned in the text, not alphabetically. Cite references in the text, tables, and legends in sequential, numerical order, placing the numbers in square brackets. References cited only in tables or figure legends should be numbered in accordance with a sequence established by the first mention in the text of the particular table or figure. Journal titles are to be abbreviated according to the List of Journals Indexed in Index Medicus published by the U.S. Department of Health and Human Services. Examples of reference style are as follows:

Journal:

[1] Muller, F. L.; Lustgarten, M. S.; Jang, Y.; Richardson, A.; Van Remmen, H. Trends in oxidative aging theories. *Free Radic. Biol. Med.* 43:477-503; 2007.

Book:

[2] Van Faassen, E.; Vanin, A., eds. *Radicals For Life: the Various Forms of nitric oxide*. Amsterdam: Elsevier; 2007.

Chapter in edited book:

[3] Zuo, L.; Clanton, T. L. Detection of reactive oxygen and nitrogen species in tissues using redox-sensitive fluorescent probes. In: Sen, C. K.; Packer, L., eds. *Redox cell biology and genetics, part A. Methods in enzymology, volume 352*. San Diego: Academic Press; 2002: 307-325.

Abstract:

[4] Freeman, B.; Aslan, M. Tissue oxidation and nitration reactions in a mouse model and humans with sickle cell disease (abstract). *Free Radic. Biol. Med.* 33:S298; 2002.

Manuscripts that have been accepted for publication may be cited as "in press" in the reference list using the estimated year of publication:

[5] Aguirre, J.; Lambeth, J.D. Nox enzymes from fungus to fly to fish and what they tell us about Nox function in mammals. *Free Radic. Biol. Med.* In press; 2010.

Reference to a paper as "in press" implies that it has been accepted for publication. Evidence (e.g., a photocopy of the note of acceptance from the journal concerned) should accompany the submitted typescript. Papers that are "in press" should be included as a number in the text. Other papers submitted before or simultaneously with the paper in question should be included as a number in the text and in the References section, stating the name of the journal. Copies of papers that are submitted elsewhere should be provided for inspection by the Editors. Omission of this information will delay publication and may lead to redating of a submitted manuscript. Papers presented at scientific meetings that are not available in published form should not be cited as references in the References section.

Unpublished results should not be listed in the References section. In the text they are mentioned as follows: "(Tervoort MV and Glimcher J, unpublished data)". When unpublished results are cited, the data should be provided for the Editors' information when essential for proper evaluation, or if requested.

A personal communication should be mentioned in the text as follows: "(Tervoort MV, personal communication)". Authors should not make unauthorized use of personal communications. Personal communications are not to be included in the Reference section.

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-Itwa/>.

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>.

Supplementary material captions

Each supplementary material file should have a short caption which will be placed at the bottom of the article, where it can assist the reader and also be used by search engines.

Full Online Submission

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 designated as corresponding Author:

- E-mail address
- Full postal address
- Telephone and fax numbers

All necessary files have been uploaded

- Keywords

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

Further considerations

- Manuscript has been "spellchecked" and "grammar-checked"
- References are in the correct format for this journal - preferred but not essential.
- 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 Web)
- Color figures are clearly marked as being intended for color reproduction on the Web (free of charge) and in print or to be reproduced in color on the Web (free of charge) and in black-and-white in print
- If only color on the Web is required, black and white versions of the figures are also supplied for printing purposes

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

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.

Online proof correction

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, 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](#). 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>