MOLECULAR METABOLISM
Supported by the German Center for Diabetes Research (DZD)

DESCRIPTION

*Molecular Metabolism* is committed to serving as a platform reporting breakthroughs from all stages of the discovery and development of novel and improved personalized medicines for obesity, diabetes and associated diseases. The journal aims to publish hypothesis driven research of leading scientists paving the way to a better understanding of metabolic physiology, thereby enabling progress toward prevention and ultimately a cure of the metabolic syndrome. *Molecular Metabolism* reports interdisciplinary science with the potential for transformative impact on today’s metabolism research, focusing on translation of major basic research discoveries toward the personalized medicines needed to prevent and cure diabesity and associated diseases tomorrow.

AUDIENCE

Diabetologists, endocrinologists, obesity experts, drug discovery professionals, biotechnologists, internists

IMPACT FACTOR

2016: 6.799 © Thomson Reuters Journal Citation Reports 2017

ABSTRACTING AND INDEXING

EMBASE
PubMed
Scopus
Directory of Open Access Journals (DOAJ)
PubMed Central

EDITORIAL BOARD

*Founding Editor in Chief*
Matthias Tschöp, Helmholtz Center Munich
Business Campus Garching, Germany
**Founding Editors**

**Jens Brüning**, University of Cologne  
Institute for Genetics  
Cologne, Germany

**Tamas Horvath**, University of Michigan  
Section of Comparative Medicine  
Yale School of Medicine  
New Haven, CT, USA

**Martin Myers**, University of Michigan  
Division of Metabolism, Endocrinology and Diabetes  
Ann Arbor, MI, USA

**Editorial Consultant**

**Ushma Neill**, Memorial Sloan-Kettering Cancer Center  
New York, USA

**Managing Editor**

**Silke Morin**, Helmholtz Center Munich  
Klinikum Rechts der Isar  
Munich, Germany

**Managing Associate Editors**

**Marcelo Dietrich**, Yale University  
Section of Comparative Medicine  
Yale School of Medicine  
New Haven, CT, USA

**Christine Könner**, University of Cologne  
Institute for Genetics  
Cologne, Germany

**Carola Meyer**, Helmholtz Center Munich  
Business Campus Garching, Germany

**Timo Müller**, Helmholtz Center Munich  
Business Campus Garching, Germany

**Kerstin Stemmer**, Helmholtz Center Munich  
Business Campus Garching, Germany

**Marc Walter**, Helmholtz Center Munich  
Business Campus Garching, Germany

**Chun-Xia Yi**, Helmholtz Center Munich  
Business Campus Garching, Germany

**Regional Editors**

**Michael Cowley**, Monash University  
Department of Physiology  
Clayton, VIC, Australia  
Regional Editor for Australasia

**Takashi Kadowaki**, University of Tokyo  
School of Medicine  
Tokyo, Japan  
Regional Editor for Asia

**Randy Seeley**, University of Cincinnati  
UC/CCHMC Center of Excellence in Obesity and Diabetes  
Reading, OH, USA  
Regional Editor for The Americas

**Christian Weber**, Ludwig-Maximilians University  
Institute for Cardiovascular Prevention  
München, Germany  
Regional Editor for Europe

**Topic Editors**

**Fredrik Bäckhed**, University of Gothenburg  
The Wallenberg Laboratory for Cardiovascular and Metabolic Research  
Sahlgrenska University Hospital  
Göteborg, Sweden

**Per Olof Berggren**, Karolinska Institute  
The Rolf Luft Research Center for Diabetes and Endocrinology  
Stockholm, Sweden
Islet Biology
Martin Bidlingmaier, Ludwig-Maximilians University
Medizinische Klinik und Poliklinik IV
München, Germany
Clinical Chemistry
Matthias Blüher, University of Leipzig
Department of Medicine
Leipzig, Germany
Translational Obesity Research
Dennis Bruemmer, University of Kentucky
Lexington, KY, USA
Atherosclerosis
Christoph Büttnner, Mount Sinai School of Medicine
New York, USA
Liver Metabolism
Carles Canto, Nestlé Institute of Health Sciences
Lausanne, Switzerland
Mitochondrial Metabolism
Ajay Chawla, University of California at San Francisco
The Liver Center-UCSF
San Francisco, CA, USA
Immunology and Inflammation
Mads Tang Christensen, Novo Nordisk
Diabetes and Obesity Biology
Måløv, Denmark
Drug Development
David D’Alessio, University of Cincinnati
Mouse Metabolic Phenotyping Center
Dept. of Internal Medicine-Endocrinology
Cincinnati, OH, USA
Glucose Metabolism
Sabrina Diano, Yale University
Dept of OB/Gyn
New Haven, CT, USA
Neuroscience
Maria Diaz-Meco, Sanford Burnham Medical Research Institute
NCI-Designated Cancer Center
La Jolla, CA, USA
Metabolism and Cancer
Richard DiMarchi, Indiana University
Department of Chemistry
Bloomington, IN, USA
Drug Discovery
Vishwa Dixit, Pennington Biomedical Research Center
Immunobiology
Baton Rouge, LA, USA
Inflammasome and Metabolic Disease
Joel Elmquist, University of Texas Southwestern Medical School
Dept of Internal Medicine
Dallas, TX, USA
Hypothalamus
Edward Fisher, New York University
Division of Cardiology
New York, USA
Lipid and Lipoprotein Metabolism
Philippe Froguel, Imperial College
School of Public Health
Hammersmith Hospital
London, UK
Human Genetics Diabetes
Kevin Grove, Oregon Health and Science University
Division of Neuroscience
Oregon National Primate Research Center
Beaverton, OR, USA
Metabolic Programming
**Peter Havel**, University of California at Davis  
Depts of Molecular Biosciences and Nutrition  
Davis, CA, USA  
Translational Nutrition Biology

**Mark Heiman**, NuMe Health  
Indianapolis, IN, USA  
Nutrient Physiology

**Lora Heisler**, University of Cambridge  
Dept of Pharmacology  
Cambridge, UK  
Central Metabolic Control

**Stephan Herzig**, University of Heidelberg  
Molecular Metabolic Control  
Heidelberg, Germany  
Brown Adipose Tissue

**Herbert Herzog**, Garvan Institute of Medical Research  
Neuroscience Program  
Sydney, NSW, Australia  
Neurotransmission

**Susanna Hofmann**, Helmholtz Center Munich  
Neuherberg, Germany  
Gender and Metabolism

**Martin Hrabe DeAngelis**, Helmholtz Center Munich  
Neuherberg, Germany  
Mouse Phenotyping

**Hans-Ullrich Häring**, University of Tübingen  
Dept of Internal Medicine  
Tübingen, Germany  
Translational Diabetes Research

**Martin Jastroch**, Helmholtz Center Munich  
Business Campus Garching, Germany  
Mitochondrial Biology

**Hans Georg Joost**, German Institute of Human Nutrition  
Dife  
Nuthetal, Germany  
Rodent Genetics

**Andries Kalsbeek**, University of Amsterdam  
Netherlands Institute for Neuroscience  
Amsterdam, NL  
Circadian Rhythms and Sleep

**Lee Kaplan**, Massachusetts General Hospital  
Weight Center  
Boston, MA, USA  
Metabolic Surgery

**Alexei Kharitonenkov**, Eli Lilly  
Indianapolis, IN, USA  
Growth Factors

**Young-Bum Kim**, Harvard University  
Beth Israel Deaconess Medical Center  
Boston, MA, USA  
Insulin and Leptin Action in Metabolism

**Martin Klingenspor**, Technical University Munich  
Center for Diet and Disease  
Freising-Weihenstephan, Germany  
Energy Metabolism

**Klaus Köstner**, University of Pennsylvania  
School of Medicine  
Dept. of Genetics  
Philadelphia, PA, USA  
Gut Physiology

**Mitch Lazar**, University of Pennsylvania  
Division of Endocrinology, Diabetes and Metabolism  
Philadelphia, PA, USA  
Transcriptional Control

**Norbert Leitinger**, University of Virginia
Robert M. Berne Cardiovascular Research Center
Charlottesville, VA, USA
Macrophages and Metabolism

Heiko Lickert, Helmholtz Center Munich
Neuherberg, Germany
Stem Cell Biology

Ruth Loos, Ichan School of Medicine
The Charles Bronfman Institute for Personalized Medicine
New York, USA
Genome Wide Association Studies

Eleftheria Maratos-Flier, Harvard University
Beth Israel Deaconess Medical Center
New York, USA
Endocrinology

Guiseppe Matarese, University of Salerno
Facoltà di Medicina
Salerno, Italy
Immunometabolism

Franck Mauvais-Jarvis, Tulane University
School of Medicine
New Orleans, LA, USA
Islet Biology

Gilles Mithieux, University of Lyon
Faculté de Médecine R.T.H. Laennec
Lyon Cédex 08, France
Nutrient Sensing

Jorge Moscat, Sanford Burnham Medical Research Institute
NCI-Designated Cancer Center
La Jolla, CA, USA
Metabolism and Cancer

Sonia Najjar, University of Toledo
Department of Physiology and Pharmacology
Toledo, OH, USA
Insulin Resistance

Stephen O’Rahilly, Cambridge University
Institute of Metabolic Science
Cambridge, UK
Human Genetics Obesity

Umut Ozcan, Harvard University
Boston Children's Hospital
Boston, MA, USA
Endoplasmic Reticulum Stress

Uberto Pagotto, University of Bologna
Dipartimento di Scienze Mediche e Chirurgiche
Bologna, Italy
Endocannabinoids

Matthew Poy, Max Delbrück Center for Molecular Medicine
Berlin, Germany
MicroRNA

Eric Ravussin, Pennington Biomedical Research Center
John S McIlhenny Skeletal Muscle Physiology Lab
Baton Rouge, LA, USA
Human Energy Metabolism

Michael Ristow, Swiss Institute of Technology,
ETH Zürich, Schwerzenbach/Zürich, Switzerland
Ageing and Metabolism

Michael Roden, ETH Zürich
Schwerzenbach/Zürich, Switzerland
Muscle Metabolism

Kei Sakamoto, Nestlé Institute of Health Science
Lausanne, Switzerland
Cell Metabolism

Philipp Scherer, University of Texas Southwestern Medical School
White Adipose Tissue
Michael Schwartz, University of Washington
Touchstone Diabetes Center
Seattle, WA, USA
Neuroendocrinology

Thue Schwartz, Copenhagen University
Department of Neuroscience and Pharmacology
Copenhagen, Denmark
Receptor Biology

Michele Solimena, Technical University Dresden
Universitaetsklinikum Dresden
Molecular Diabetology
Dresden, Germany
Beta Cells

John Speakman, University of Aberdeen
School of Biological Sciences
Aberdeen, UK
Energy Expenditure

Joachim Spranger, University of Berlin
Clinic of Endocrinology, Diabetes and Nutrition
Berlin, Germany
Clinical Diabetes

Doris Stoffers, University of Pennsylvania
Perelman School of Medicine
Philadelphia, PA, USA
Pancreas Development

Allan Tall, Columbia University
Dept of Medicine
New York, USA
Atherosclerosis

George Thomas, Bellvitge Biomedical Research Institute
Hospital Duran I Reynals
L'Hospitalet de Lloretgat, Barcelona
Spain
Cell Signaling

Peter Tontonoz, University of California at Los Angeles
HHMI/Path + Lab Med/BME IDP
Los Angeles, CA, USA
Nuclear Receptors and Metabolism

Mathias Treier, University of Berlin
MDC
Berlin, Germany
Developmental Biology

Eve van Cauter, University of Chicago
Biological Sciences Division
Chicago, IL, USA
Sleep and Metabolic Disease

Morris White, Harvard University
HHMI/Division of Endocrinology
Boston, MA, USA
Targeted Mouse Mutagenesis

Christian Wolfrum, Swiss Federal Institute of Technology
Translational Nutrition Biology
Schwerzenbach, Switzerland
Adipocyte Biology

Steve Woods, University of Cincinnati
Mouse Metabolic Phenotyping Center
Cincinnati, OH, USA
Feeding Behavior

Rudolf Zechner, University of Graz
Institute of Molecular Biosciences
Graz, Austria
Lipid Metabolism

Lori Zeltser, Columbia University
Naomi Berrie Diabetes Center
New York, USA


Jenny Tong, University of Cincinnati
Div. of Endocrinology, Diabetes and Metabolism
Cincinnati, OH, USA

Kathryn Wellen, University of Pennsylvania
Abramson Family Cancer Research Institute
Philadelphia, PA USA

Christian Weyer, Amylin Pharmaceuticals
Toronto, Canada

Michael Wheeler, University of Toronto
Department of Physiology
Toronto, USA

Petra Wiedmer, German Institute of Human Nutrition
Dife
Nuthetal, Germany

Giles Yeo, University of Cambridge
Metabolic Research Laboratories, Institute of Metabolic Science
Cambridge, UK

Jeffrey Zigman, University of Texas Southwestern Medical School
Divisions of Hypothalamic Research and Endocrinology a. Metabolism
Dallas, TX, USA
GUIDE FOR AUTHORS

INTRODUCTION
Molecular Metabolism is committed to serving as a platform reporting breakthroughs from all stages of the discovery and development of novel and improved personalized medicines for obesity, diabetes and associated diseases. The journal aims to publish hypothesis driven research of leading scientists paving the way to a better understanding of metabolic physiology, thereby enabling progress toward prevention and ultimately a cure of the metabolic syndrome. Molecular Metabolism reports interdisciplinary science with the potential for transformative impact on today's metabolism research, focusing on translation of major basic research discoveries toward the personalized medicines needed to prevent and cure diabesity and associated diseases tomorrow.

Editorial process
Molecular Metabolism is an open access, online journal with a fast track submission process: After initial evaluation by the editorial staff, if the submission is considered eligible for publication it will be peer-reviewed within 72 hours of submission. The author then has 72 hours to make revisions, if required, after notification by the Editor. Online publication of accepted manuscripts will occur within 14 days of submission. Molecular Metabolism follows an author-pays open access model.

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

Ensure that the following items are present:
One author has been designated as the corresponding author with contact details:
• E-mail address
• Full postal address

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

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

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

For further information, visit our Support Center.

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

Human and animal rights
If the work involves the use of human subjects, the author should ensure that the work described has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for experiments involving humans; Uniform Requirements for manuscripts submitted to
Biomedical journals. Authors should include a statement in the manuscript that informed consent was obtained for experimentation with human subjects. The privacy rights of human subjects must always be observed.

All animal experiments should comply with the ARRIVE guidelines and should be carried out in accordance with the U.K. Animals (Scientific Procedures) Act, 1986 and associated guidelines, EU Directive 2010/63/EU for animal experiments, or the National Institutes of Health guide for the care and use of Laboratory animals (NIH Publications No. 8023, revised 1978) and the authors should clearly indicate in the manuscript that such guidelines have been followed.

Declaration of interest
All authors must disclose any financial and personal relationships with other people or organizations that could inappropriately influence (bias) their work. Examples of potential conflicts of interest include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding. If there are no conflicts of interest then please state this: 'Conflicts of interest: none'. More information.

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

Clinical trial results
In line with the position of the International Committee of Medical Journal Editors, the journal will not consider results posted in the same clinical trials registry in which primary registration resides to be prior publication if the results posted are presented in the form of a brief structured (less than 500 words) abstract or table. However, divulging results in other circumstances (e.g., investors' meetings) is discouraged and may jeopardise consideration of the manuscript. Authors should fully disclose all posting in registries of results of the same or closely related work.

Reporting clinical trials
Randomized controlled trials should be presented according to the CONSORT guidelines. At manuscript submission, authors must provide the CONSORT checklist accompanied by a flow diagram that illustrates the progress of patients through the trial, including recruitment, enrollment, randomization, withdrawal and completion, and a detailed description of the randomization procedure. The CONSORT checklist and template flow diagram are available online.

Registration of clinical trials
Registration in a public trials registry is a condition for publication of clinical trials in this journal in accordance with International Committee of Medical Journal Editors recommendations. Trials must register at or before the onset of patient enrolment. The clinical trial registration number should be included at the end of the abstract of the article. A clinical trial is defined as any research study that prospectively assigns human participants or groups of humans to one or more health-related interventions to evaluate the effects of health outcomes. Health-related interventions include any intervention used to modify a biomedical or health-related outcome (for example drugs, surgical procedures, devices, behavioural treatments, dietary interventions, and process-of-care changes). Health outcomes include any biomedical or health-related measures obtained in patients or participants, including pharmacokinetic measures and adverse events. Purely observational studies (those in which the assignment of the medical intervention is not at the discretion of the investigator) will not require registration.

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

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

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

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

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 funding bodies will reimburse the author for the Open Access Publication Fee. Details of existing agreements are available online.

Open access
This is an open access journal: all articles will be immediately and permanently free for everyone to read and download. To provide open access, this journal has an open access fee (also known as an article publishing charge APC) which needs to be paid by the authors or on their behalf e.g. by their research funder or institution. 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 for this journal is USD 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.

Informed consent and patient details
Studies on patients or volunteers require ethics committee approval and informed consent, which should be documented in the paper. Appropriate consents, permissions and releases must be obtained where an author wishes to include case details or other personal information or images of patients and any other individuals in an Elsevier publication. Written consents must be retained by the author and copies of the consents or evidence that such consents have been obtained must be provided to Elsevier on request. For more information, please review the Elsevier Policy on the Use of Images or Personal Information of Patients or Other Individuals. Unless you have written permission from the patient (or, where applicable, the next of kin), the personal details of any patient included in any part of the article and in any supplementary materials (including all illustrations and videos) must be removed before submission.

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.
Submit your article
Please submit your article via http://www.evise.com/evise/jrnl/MOLMET.

**Article types**
A brief description of each article type is provided below. Suggested word counts are provided although not strictly enforced.

**Full-length Article**: These present conceptual advances regarding a biological/clinical question of wide interest to the journal's readership. These manuscripts should be around 8500 words for the main text with no more than 8 figures and/or tables. Additional items may be published online as Supplemental Data.

**Review Article**: These are full-length interpretations of topics of interest to the journal's readership. Reviews can provide a new conceptual framework for recent data. These should be around 7500 words for the main text, with no more than 5 figures.

**Brief Communication**: These are shorter length, original research articles that publish novel but preliminary results. Brief Communications should be around 3500 words for the main text, with no more than 4 figures.

**PREPARATION**

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

**Use of word processing software**
It is important that the file be saved in the native format of the word processor used. The text should be in single-column format. Keep the layout of the text as simple as possible. Most formatting codes will be removed and replaced on processing the article. In particular, do not use the word processor's options to justify text or to hyphenate words. However, do use bold face, italics, subscripts, superscripts etc. When preparing tables, if you are using a table grid, use only one grid for each individual table and not a grid for each row. If no grid is used, use tabs, not spaces, to align columns. The electronic text should be prepared in a way very similar to that of conventional manuscripts (see also the Guide to Publishing with Elsevier). Note that source files of figures, tables and text graphics will be required whether or not you embed your figures in the text. 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 - numbered sections**
Divide your article into clearly defined and numbered sections. Subsections should be numbered 1.1 (then 1.1.1, 1.1.2, ...), 1.2, etc. (the abstract is not included in section numbering). Use this numbering also for internal cross-referencing: do not just refer to 'the text'. Any subsection may be given a brief heading. Each heading should appear on its own separate line.

**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.

**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.

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 number 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.

Structured abstract
A structured abstract, by means of appropriate headings entitled "Objective"; "Methods"; "Results"; "Conclusions", should provide the context or background for the research and should state its purpose, basic procedures or study design (selection of study subjects or laboratory animals, observational and analytical methods), main findings (giving specific effect sizes and their statistical significance, if possible), and principal conclusions. It should emphasize new and important aspects of the study or observations.

Review Articles should also contain a Structured Abstract, sub-divided into subsections entitled "Background"; "Scope of Review"; "Major Conclusions".

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. You can view Example Graphical Abstracts on our information site.

Authors can make use of Elsevier's Illustration Services to ensure the best presentation of their images and in accordance with all technical requirements.

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). You can view example Highlights on our information site.

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
Follow internationally accepted rules and conventions: use the international system of units (SI). If other units are mentioned, please give their equivalent in SI.

Footnotes
Footnotes should be used sparingly. Number them consecutively throughout the article. Many word processors can build footnotes into the text, and this feature may be used. Otherwise, please indicate the position of footnotes in the text and list the footnotes themselves separately at the end of the article. Do not include footnotes in the Reference list.

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.
• Embed the used fonts if the application provides that option.
• Aim to use the following fonts in your illustrations: Arial, Courier, Times New Roman, Symbol, or use fonts that look similar.
• Number the illustrations according to their sequence in the text.
• Use a logical naming convention for your artwork files.
• Provide captions to illustrations separately.
• Size the illustrations close to the desired dimensions of the published version.
• Submit each illustration as a separate file.
A detailed guide on electronic artwork is available.
You are urged to visit this site; some excerpts from the detailed information are given here.
Formats
If your electronic artwork is created in a Microsoft Office application (Word, PowerPoint, Excel) then please supply 'as is' in the native document format.
Regardless of the application used other than Microsoft Office, 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 all used fonts.
TIFF (or JPEG): Color or grayscale photographs (halftones), keep to a minimum of 300 dpi.
TIFF (or JPEG): Bitmapped (pure black & white pixels) line drawings, keep to a minimum of 1000 dpi.
TIFF (or JPEG): Combinations bitmapped line/halftone (color or grayscale), keep to a minimum of 500 dpi.
Please do not:
• Supply files that are optimized for screen use (e.g., GIF, BMP, PICT, WPG); these typically have a low number of pixels and limited set of colors;
• Supply files that are too low in resolution;
• Submit graphics that are disproportionately large for the content.
Figure captions
Ensure that each illustration has a caption. Supply captions separately, not attached to the figure. A caption should comprise a brief title (not on the figure itself) and a description of the illustration. Keep text in the illustrations themselves to a minimum but explain all symbols and abbreviations used.
Tables
Please submit tables as editable text and not as images. Tables can be placed either next to the relevant text in the article, or on separate page(s) at the end. Number tables consecutively in accordance with their appearance in the text and place any table notes below the table body. Be sparing in the use of tables and ensure that the data presented in them do not duplicate results described elsewhere in the article. Please avoid using vertical rules and shading in table cells.

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

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

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

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

Reference style
Text: Indicate references by number(s) in square brackets in line with the text. The actual authors can be referred to, but the reference number(s) must always be given.

List: Number the references (numbers in square brackets) in the list in the order in which they appear in the text.

Examples:
Reference to a journal publication:
Reference to a book:
Reference to a chapter in an edited book:

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

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

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

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

**Data linking**

If you have made your research data available in a data repository, you can link your article directly to the dataset. Elsevier collaborates with a number of repositories to link articles on ScienceDirect with relevant repositories, giving readers access to underlying data that gives them a better understanding of the research described.

There are different ways to link your datasets to your article. When available, you can directly link your dataset to your article by providing the relevant information in the submission system. For more information, visit the database linking page.

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

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

**Mendeley Data**

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

**Data statement**

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

**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. Authors of this journal will automatically receive an invitation e-mail to create an AudioSlides presentation after acceptance of their paper.

**AFTER ACCEPTANCE**

**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 will be notified and receive a link to the published version of the open access article on ScienceDirect. This link is in the form of an article DOI link which can be shared 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. 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.

**AUTHOR INQUIRIES**

Visit the Elsevier Support Center to find the answers you need. Here you will find everything from Frequently Asked Questions to ways to get in touch.

You can also check the status of your submitted article or find out when your accepted article will be published.

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