DESCRIPTION

Journal of Pharmacological and Toxicological Methods publishes original articles on current methods of investigation used in pharmacology and toxicology. Pharmacology and toxicology are defined in the broadest sense, referring to actions of drugs and chemicals on all living systems. With its international editorial board and noted contributors, Journal of Pharmacological and Toxicological Methods is the leading journal devoted exclusively to experimental procedures used by pharmacologists and toxicologists.

Benefits to authors
We also provide many author benefits, such as free PDFs, a liberal copyright policy, special discounts on Elsevier publications and much more. Please click here for more information on our author services.

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

AUDIENCE

Pharmacologists, Toxicologists, Biochemists.

IMPACT FACTOR

2018: 2.679 © Clarivate Analytics Journal Citation Reports 2019

ABSTRACTING AND INDEXING

EMBiology
BIOSIS Citation Index
Chemical Abstracts
Current Contents - Life Sciences
Embase
PubMed/Medline
International Pharmaceutical Abstracts
Scopus
EDITORIAL BOARD

Editor-in-Chief
M.J. Curtis, Saint Thomas' Hospital Cardiovascular Centre, Lambeth Palace Rd, SE17EH, London, United Kingdom, Fax: +44 207 1883902

Editorial Board
N. Abi-Gerges, San Diego, California, United States
C. Austin, Ormskirk, United Kingdom
T.J. Baird, Mataawan, Michigan, United States
F.A. Barile, Queens, New York, United States
K. Chaudhary, King of Prussia, Pennsylvania, United States
H. Clements-Jewery, Rockford, Illinois, United States
D. Cooper, London, United Kingdom
F. D’Acquisto, London, United Kingdom
N. Daneshtalab, St John’s, Newfoundland and Labrador, Canada
R. Forster, Evreux, France
D.J. Gallacher, Beerse, Belgium
M.A. Giembycz, Calgary, Alberta, Canada
J.H. Gill, Newcastle Upon Tyne, United Kingdom
B. Guth, Biberach, Germany
J.C. Hancox, Bristol, United Kingdom
V. Herzig, Brisbane, Australia
W.C. Hodgson, Clayton, Victoria, Australia
W. Jian, Raritan, New Jersey, United States
X. Jin, Nankai, China
M. Klonizakis, Lincoln, United Kingdom
S. Kortagere, Philadelphia, Pennsylvania, United States
S. Marcassin, Silver Spring, Maryland, United States
R. Martin, South San Francisco, California, United States
S.E. Ohia, Houston, Texas, United States
A.E. Olesen, Aalborg, Denmark
P.J. Pauwels, Lyon, France
S.C. Pitchford, London, United Kingdom
M.K. Pugsley, Cranbury, New Jersey, United States
M. Radenkovic, Beograd, Serbia
N.E. Saadé, Beirut, Lebanon
D.J. Sellers, Gold Coast, Australia
M. Skinner, Alderley Edge, United Kingdom
R. Tabrizchi, St John’s, Newfoundland and Labrador, Canada
M.B. Thomsen, Copenhagen, Denmark
S. Ventura, Parkville, Australia
S. Voruganti, Dallas, Texas, United States
T. Wisialowski, Princeton, New Jersey, United States
J.-T. Wu, Cambridge, Massachusetts, United States
L. Zhou, Ann Arbor, Michigan, United States
GUIDE FOR AUTHORS

INTRODUCTION

*Journal of Pharmacological and Toxicological Methods* publishes articles on methods used in pharmacology, safety pharmacology and toxicology. *Journal of Pharmacological and Toxicological Methods* is the leading international journal devoted exclusively to the elaboration and validation of experimental methods.

Please visit our Pharmacology Author Resources page for guidance on manuscript preparation.

**Types of paper**

The *Journal of Pharmacological and Toxicological Methods* publishes papers in a range of categories:

"Research paper": description and characterization of a new or modified disease model, method, technique, apparatus or approach to analysis of data. This may include interspecies comparisons that contrast drug actions from a model relevance perspective; "Short communication" detailing simple modifications of an existing model, method, technique, apparatus or approach to analysis of data; "How To" articles that provide step-by-step guidance on the execution of a specific technique; "Appraisal of state-of-the-art" or "Historical review" of particular models, methods, techniques or apparatus; "Methods in drug discovery" - perhaps the most important category. Here, by showing how a method was used to select a drug that was eventually found to be clinically effective, the author establishes validation of the method.

**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.
Studies in humans and animals
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. The manuscript should be in line with the Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals and aim for the inclusion of representative human populations (sex, age and ethnicity) as per those recommendations. The terms sex and gender should be used correctly.

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. The sex of animals must be indicated, and where appropriate, the influence (or association) of sex on the results of the study.

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. Authors should complete the declaration of interest statement using this template and upload to the submission system at the Attach/Upload Files step. If there are no interests to declare, please choose: 'Declarations of interest: none' in the template. This statement will be published within the article if accepted. More information.

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

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

Use of inclusive language
Inclusive language acknowledges diversity, conveys respect to all people, is sensitive to differences, and promotes equal opportunities. Articles should make no assumptions about the beliefs or commitments of any reader, should contain nothing which might imply that one individual is superior to another on the grounds of race, sex, culture or any other characteristic, and should use inclusive language throughout. Authors should ensure that writing is free from bias, for instance by using 'he or she', 'his/her' instead of 'he' or 'his', and by making use of job titles that are free of stereotyping (e.g. 'chairperson' instead of 'chairman' and 'flight attendant' instead of 'stewardess').

Author contributions
For transparency, we encourage authors to submit an author statement file outlining their individual contributions to the paper using the relevant CRediT roles: Conceptualization; Data curation; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources; Software; Supervision; Validation; Visualization; Roles/Writing - original draft; Writing - review & editing. Authorship statements should be formatted with the names of authors first and CRediT role(s) following. More details and an example

Changes to authorship
Authors are expected to consider carefully the list and order of authors before submitting their manuscript and provide the definitive list of authors at the time of the original submission. Any addition, deletion or rearrangement of author names in the authorship list should be made only
before the manuscript has been accepted and only if approved by the journal Editor. To request such a change, the Editor must receive the following from the corresponding author: (a) the reason for the change in author list and (b) written confirmation (e-mail, letter) from all authors that they agree with the addition, removal or rearrangement. In the case of addition or removal of authors, this includes confirmation from the author being added or removed. Only in exceptional circumstances will the Editor consider the addition, deletion or rearrangement of authors after the manuscript has been accepted. While the Editor considers the request, publication of the manuscript will be suspended. If the manuscript has already been published in an online issue, any requests approved by the Editor will result in a corrigendum.

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

Subscribers may reproduce tables of contents or prepare lists of articles including abstracts for internal circulation within their institutions. Permission of the Publisher is required for resale or distribution outside the institution and for all other derivative works, including compilations and translations. If excerpts from other copyrighted works are included, the author(s) must obtain written permission from the copyright owners and credit the source(s) in the article. Elsevier has preprinted forms for use by authors in these cases.

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

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

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

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

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

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

Language (usage and editing services)
Please write your text in good English (American or British usage is accepted, but not a mixture of these). Authors who feel their English language manuscript may require editing to eliminate possible grammatical or spelling errors and to conform to correct scientific English may wish to use the English Language Editing service available from Elsevier's Author Services.

Submission
Our online submission system guides you stepwise through the process of entering your article details and uploading your files. The system converts your article files to a single PDF file used in the peer-review process. Editable files (e.g., Word, LaTeX) are required to typeset your article for final publication. All correspondence, including notification of the Editor's decision and requests for revision, is sent by e-mail.
Additional information
Manuscripts will be evaluated by a member of the board of editors of the Journal, and a panel of international reviewers. An editorial decision will normally be made within 4 weeks of receipt of the manuscript, and publication will normally take place within 3 months of final acceptance.

PREPARATION
Note that papers focused on the actions of drugs are beyond the scope of the journal.

Specific instructions for regular articles & short communications:

Introduction
This must outline the reason for the study and justify the approach taken.

Methods
This section should be sufficiently detailed to permit the reader to replicate the study. It should be a full recipe, with step by step instructions. We prefer the bulk of the descriptions in prose, but tables summarising sequences of procedures are a good accompaniment to the text. Subcomponents of the method that have been described in detail in the literature should be described in full, but appropriate citation of the original source method is mandatory.

Results
This section should be concise and must not contain repetition of the methods. Data in the text must not replicate data in tables or figures. SI units must be used.

Discussion
The potential value of the data to pharmacological or toxicological or safety pharmacology research methods must be clearly explained, with appropriate reference to existing methods and their limitations. This section must not contain paragraphs dealing with topics that are beyond the scope of the study. Use subheadings for clarity.

Specific instructions for "How To" articles:
"How To" articles provide step-by-step guidance on the execution of specific techniques.

Introduction
For "How To" articles, this section will be very brief, and will simply identify the therapeutic area, the goal of the method, and give mention to published alternatives descriptions if available. It is unlikely that many papers will be cited in this section.

Methods
This section should be sufficiently detailed to permit the reader to replicate the study. It should be a full recipe, with step by step instructions. We prefer the bulk of the descriptions in prose, but tables summarising sequences of procedures are a good accompaniment to the text. Subcomponents of the method that have been described in detail in the literature should be described in full, but appropriate citation of the original source method is mandatory.

Results
This section should be concise and must not contain repetition of the methods. Data in the text must not replicate data in tables or figures. SI units must be used.

Discussion

The potential value of the data to pharmacological or toxicological research methods must be clearly explained, with appropriate reference to existing methods and their limitations. This section must not contain paragraphs dealing with topics that are beyond the scope of the study.

Specific instructions for "Appraisal of State of the Art"-articles:

Appraisal articles are reviews about the current best models. The article should identify and describe the current best model, and discuss the evidence (or lack of) to support this. A good model should demonstrably detect drugs that work (or cause adverse effects) in humans, and demonstrably have few false positives or negatives. This evidence should be presented. The review should contrast the current best model with other available but inferior models, thereby illustrating why one is the state-of-the-art model.

Text to be divided into sections according to author choice.

Specific instructions for "Historical review" articles:

Historical reviews can be more personal and less formal. Senior figures in a field may have decades of experience with models, methods, techniques of apparatus. It is of immense value and interest to the research community to learn the history of the development of a model, understand why one model was abandoned and another developed, and get insight into the thinking behind a model, and the impact of good and bad models in drug development in a particular field. In addition, in many fields many models are still used that are transparently inadequate - it would be of great value to obtain a candid expose from an experienced practitioner as to why this might be, including insight into personal perspective as it changed over the years.

Text to be divided into sections according to author choice.

Specific instructions for "Methods in drug discovery" articles:

These articles are specifically intended to showcase, for the wider audience, exactly how methods were applied by a pharmaceutical company in the preclinical development of one of their own drugs. While it is appreciated that companies may wish to keep certain information confidential, it would be of great interest to the reader to be able to understand the logic (or lack of) behind the choice of each preclinical test used in the drug's development. Demonstration that use of a series of models, methods, techniques and apparatus gave rise to a drug that works in man is the closest we can get to a methods validation - a much neglected area. The reader would also benefit by having revealed the logic behind the decision-making that allowed the successful drug to proceed in development, while analogues and other compounds were dropped. Consideration of whether this decision was making based on proof, or on the exercise of judgment, or a mixture of both will be of value to the author as well as the reader as it will identify weak areas in the process for future improvements in pharmacological and toxicological methods.

Text to be divided into the following sections

Brief overview of evidence that drug X is now established as being clinically effective Original hypothesis that triggered the search for a drug if type X Preclinical models used in defining drug X's properties (subsections in sequence, explaining logic behind choice) Outcome of tests (subsections in sequence, explaining logic behind successive decision making) Conclusions

Specific instructions for all articles:

Essential title page information for all articles
Title. Please be concise and informative. Titles are used in information-retrieval systems so avoid abbreviations. Author names and affiliations. Please type the family name last (e.g., Michael J Curtis). Type the authors' affiliation addresses below the names. Use letters in lower-case superscript immediately after the author's name and in front of the appropriate address if there are multiple addresses. Provide the full postal address of each affiliation, including the country name, and the e-mail address of each author. Corresponding author. Clearly indicate the corresponding author and ensure their telephone and fax numbers (with country and area code) are provided. 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. Superscript Arabic numerals are used for such footnotes.

Abstract
This must not exceed 250 words and should be subdivided into four subsections headed: Introduction, Methods, Results, Discussion.

Keywords
Immediately after the abstract, provide a maximum of 10 keywords (one of which should be "methods") in alphabetical order, using British spelling and avoiding general and plural terms and multiple concepts (avoid, for example, "and", "of"). These keywords will be used for indexing purposes.

Abbreviations
Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible.

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.

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

Highlights should be submitted in a separate editable file in the online submission system. Please use 'Highlights' in the file name and include 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point).

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

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

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

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

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

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

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
Electronic artwork
General points
• Use uniform lettering and sizing of your original artwork, and select a font as large as possible
• Use a 'sans serif' fonts in your illustrations such as: Arial, Helvetica, Tahoma or Calibri and use only one font throughout the figures
• Number the illustrations according to their sequence in the text
• Use a logical naming convention for your artwork files
• Do not put legends in the figures
• 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 on our website: https://www.elsevier.com/artworkinstructions.

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 and white pixels) line drawings, keep to a minimum of 1000 dpi.
TIFF (or JPEG): Combinations bitmapped line/half-tone (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.

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

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

Users of Mendeley Desktop can easily install the reference style for this journal by clicking the following link:

When preparing your manuscript, you will then be able to select this style using the Mendeley plug-ins for Microsoft Word or LibreOffice.

Reference style
Text: Citations in the text should follow the referencing style used by the American Psychological Association. You are referred to the Publication Manual of the American Psychological Association, Sixth Edition, ISBN 978-1-4338-0561-5, copies of which may be ordered online or APA Order Dept., P.O.B. 2710, Hyattsville, MD 20784, USA or APA, 3 Henrietta Street, London, WC3E 8LU, UK.
List: references should be arranged first alphabetically and then further sorted chronologically if necessary. More than one reference from the same author(s) in the same year must be identified by the letters 'a', 'b', 'c', etc., placed after the year of publication.
Examples:
Reference to a journal publication:
Reference to a journal publication with an article number:

Reference to a book:

Reference to a chapter in an edited book:

Reference to a website:

Reference to a dataset:

Reference to a conference paper or poster presentation:

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

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

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

**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 in Brief
You have the option of converting any or all parts of your supplementary or additional raw data into one or multiple data articles, a new kind of article that houses and describes your data. Data articles ensure that your data is actively reviewed, curated, formatted, indexed, given a DOI and publicly available to all upon publication. You are encouraged to submit your article for Data in Brief as an additional item directly alongside the revised version of your manuscript. If your research article is accepted, your data article will automatically be transferred over to Data in Brief where it will be editorially reviewed and published in the open access data journal, Data in Brief. Please note an open access fee of 600 USD is payable for publication in Data in Brief. Full details can be found on the Data in Brief website. Please use this template to write your Data in Brief.

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.

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

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

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

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

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