DESCRIPTION

The journal reports basic, comparative and clinical immunology as they pertain to the animal species designated here: livestock, poultry, and fish species that are major food animals and companion animals such as cats, dogs, horses and camels, and wildlife species that act as reservoirs for food, companion or human infectious diseases, or as models for human disease.

Rodent models of infectious diseases that are of importance in the animal species indicated above, when the disease requires a level of containment that is not readily available for larger animal experimentation (ABSL3), will be considered. Papers on rabbits, lizards, guinea pigs, badgers, armadillos, elephants, antelope, and buffalo will be reviewed if the research advances our fundamental understanding of immunology, or if they act as a reservoir of infectious disease for the primary animal species designated above, or for humans. Manuscripts employing other species will be reviewed if justified as fitting into the categories above.

The following topics are appropriate: biology of cells and mechanisms of the immune system, immunochemistry, immunodeficiencies, immunodiagnosis, immunogenetics, immunopathology, immunology of infectious disease and tumors, immunoprophylaxis including vaccine development and delivery, immunological aspects of pregnancy including passive immunity, autoimmunity, neuroimmunology, and transplantation immunology. Manuscripts that describe new genes and development of tools such as monoclonal antibodies are also of interest when part of a larger biological study. Studies employing extracts or constituents (plant extracts, feed additives or microbiome) must be sufficiently defined to be reproduced in other laboratories and also provide evidence for possible mechanisms and not simply show an effect on the immune system.

Ideas and suggestions for Special Issues are also welcome. These may focus on a planned conference/symposium for which a selection of the best papers could be published together (after peer review). Alternatively, they could consist of a group of invited papers which together present an up-to-date overview on an important immunological topic.

AUDIENCE

Veterinary and Medical Immunologists, Immunopathologists.
IMPACT FACTOR
2019: 1.713 © Clarivate Analytics Journal Citation Reports 2020

ABSTRACTING AND INDEXING
PubMed/Medline
BIOSIS Citation Index
Index Veterinarius
Veterinary Bulletin
Scopus
Elsevier BIOBASE
Current Contents - Life Sciences

EDITORIAL BOARD

Editors-in-Chief
L.J. Gershwin, University of California Davis, Davis, California, United States
E.J. Glass, The University of Edinburgh, Edinburgh, United Kingdom
S. Sharif, University of Guelph, Guelph, Ontario, Canada

Review Articles Editors
W.T. Golde, Moredun Research Institute, Penicuik, United Kingdom

Editorial Advisory Board
C.L. Baldwin, Amherst, United States
W. Baumgärtner, Hannover, Germany
D.R. Brown, Gainesville, FL, United States
B.M. Buddle, Palmerston North, New Zealand
F. Ceciliani, Milan, Italy
E. Davis, Manhattan, KS, United States
N. Decaro, Bari, Italy
P.J. Feisburg, Philadelphia, PA, United States
C. Fossum, Uppsala, Sweden
P. Griebel, Saskatoon, SK, Canada
R.E.W. Halliwell, Edinburgh, Scotland, United Kingdom
J.C. Hope, Roslin, United Kingdom
D.W. Horohov, Lexington, KY, United States
M. Koci, Raleigh, North Carolina, United States
A.P. Koets, Utrecht, Netherlands
R. de Lima Santos, Belo Horizonte, Brazil
F. Meurens, Nantes, France
S. Muyldermans, Brussel, Belgium
J. Naessens, Nairobi, Kenya
T. Nakanishi, Fujisawa, Japan
M. Nakao, Fukuoka, Japan
M. Rocchi, Penicuik, United Kingdom
V.P.M.G. Rutten, Utrecht, Netherlands
A. Saalmüller, Vienna, Austria
L. Sordillo, East Lansing, MI, United States
A.K. Storset, Oslo, Norway
A. Summerfield, Mittelhausern, Switzerland
L. Vervele, Roslin, United Kingdom
M. Vordermeier, Addlestone, United Kingdom
B. Wagner, Ithaca, NY, United States
GUIDE FOR AUTHORS

Types of Contributions
1. Original research papers (Full-length articles and Short Communications).
2. Review articles (Mini-reviews and full-length Review Articles)
3. Scientific meeting Reports

Original research papers:
These should report the results of original research. The material should not have been previously published elsewhere, except in a preliminary form.
Full-length articles should conform to the traditional format with headings for Introduction, Materials and Methods, Results and Discussion section.

A Short Communication is a concise but complete description of a limited investigation, which will not be included in a later paper. Short Communications should be as completely documented, both by reference to the literature and description of the experimental procedures employed, as a regular paper. They should not occupy more than 6 printed pages with figures, tables and references (about 12 manuscript pages including no more than a total of 4 figures and tables) and should contain an Abstract of not more than 200 words. Headings should be Introduction, Materials and Methods with the Results and Discussion combined. The maximum total text word count in these sections is 3000.

Papers containing sequence data per se are outside of the scope of the journal but those describing sequences including utility, for example the expression and immunological function of a molecule or the generation of useful mAb, will be considered. Sequence data can be submitted to be included as supplementary information with accession numbers quoted in the text.

Reviews:
Short reviews are opinions that should cover subjects in specialised areas of veterinary immunology which are either topical, or of emerging importance, or in need of an update. They should not exceed 3000 words and be easy to read. Articles containing provocative opinions and hypotheses not yet firmly supported by experimental evidence should be suitable, provided that any biases expressed are acknowledged by the authors.

Review Articles in a traditional, more comprehensive style are also published in the journal. Authors wishing to submit these, or Mini-reviews/opinions are asked to first submit a title plus abstract for advice on suitability to the Review Articles Editor. Authors should contact Bill Golde at william.golde@moredun.ac.uk

Meeting Reports
These will be considered for publication. The decision to publish rests purely with the Editors-in-Chief. The subject matter should be within the aims and scope of the journal. Reports may be very brief summaries of recognised International Committee recommendations and decisions, or longer reports of relevant scientific meetings. Special issues containing full papers presented at a conference/workshop will also be considered.

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.

Ethics in animal experimentation
All experiments on live vertebrates must be performed in accordance with relevant institutional and national guidelines and regulations. They must meet the International Guiding Principles for Biomedical Research Involving Animals as issued by the Council for the International Organizations of Medical Sciences and The International Council for Laboratory Animal Science. They are obtainable from: Executive Secretary C.I.O.M.S., c/o WHO, Via Appia, CH-1211 Geneva 27, Switzerland, or at the following http://iclas.org/news
In the manuscript, a statement identifying the committee approving the experiments and confirming that all experiments conform to the relevant regulatory standards must be included in the Materials and Methods section. The Editors reserve the right to seek comments from reviewers or additional information from authors on any cases in which concerns arise. We also recommend that researchers carrying out experiments with animals refer to the ARRIVE guidelines.

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

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

Preprints
Please note that preprints can be shared anywhere at any time, in line with Elsevier's sharing policy. Sharing your preprints e.g. on a preprint server will not count as prior publication (see 'Multiple, redundant or concurrent publication' for more information).
Use of inclusive language
Inclusive language acknowledges diversity, conveys respect to all people, is sensitive to differences, and promotes equal opportunities. Content should make no assumptions about the beliefs or commitments of any reader; contain nothing which might imply that one individual is superior to another on the grounds of age, gender, race, ethnicity, culture, sexual orientation, disability or health condition; and use inclusive language throughout. Authors should ensure that writing is free from bias, stereotypes, slang, reference to dominant culture and/or cultural assumptions. We advise to seek gender neutrality by using plural nouns (“clinicians, patients/clients”) as default/wherever possible to avoid using "he, she," or "he/she." We recommend avoiding the use of descriptors that refer to personal attributes such as age, gender, race, ethnicity, culture, sexual orientation, disability or health condition unless they are relevant and valid. These guidelines are meant as a point of reference to help identify appropriate language but are by no means exhaustive or definitive.

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

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

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.

Open Access
This journal offers authors a choice in publishing their research:

Open Access
• Articles are freely available to both subscribers and the wider public with permitted reuse
• An Open Access publication fee is payable by authors or their research funder or institution

Subscription
• Articles are made available to subscribers as well as developing countries and patient groups through our universal access programs
• No Open Access publication fee payable by authors.
Regardless of how you choose to publish your article, the journal will apply the same peer review criteria and acceptance standards.

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

**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.

**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.

When submitting the revised manuscript, please make sure that you upload the final version of the paper. Please remove the old version(s) of the manuscript before submitting the revised version.

**Submit your article**


**Referees**

Authors are invited to provide the names of up to 4 referees (with email addresses) whom they feel are qualified to evaluate their submission (for original research papers, review articles and short communications). Submission of such names does not, however, imply that they will definitely be used as referees.

**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.](https://www.elsevier.com/guidepublication)

**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: [https://www.elsevier.com/guidepublication](https://www.elsevier.com/guidepublication)). 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.
Introduction
State the objectives of the work and provide an adequate background, avoiding a detailed literature survey or a summary of the results.

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

Results
Results should be clear and concise.

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

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

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

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

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

Abstract
A concise and factual abstract is required. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself. Your abstract should not be longer than 400 words.</>.

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.

**Keywords**
Immediately after the abstract, provide a maximum of 6 keywords 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**
A number of standard accepted abbreviations can be used in the body of a manuscript without further explanation (see Appendix 1), but must be explained if used in the Title or Abstract. Non-standard abbreviations should be explained when first used in the Abstract, and again when first used in the body of a manuscript, and should also be explained in an abbreviations list to follow the list of keywords.

For a list of standard abbreviations, see Appendix 1.

**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.

**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.

**Nomenclature**
1. Authors and Editors are, by general agreement, obliged to accept the rules governing biological nomenclature, as laid down in the International Code of Botanical Nomenclature, the International Code of Nomenclature of Bacteria, and the International Code of Zoological Nomenclature. Virologists should consult the latest Report of the International Committee on Taxonomy of Viruses for proper nomenclature and spelling.

2. All biota (crops, plants, insects, birds, mammals, etc.) should be identified by their scientific names when the English term is first used, with the exception of common domestic animals.

3. All biocides and other organic compounds must be identified by their Geneva names when first used in the text. Active ingredients of all formulations should be likewise identified.

4. For chemical nomenclature, the conventions of the International Union of Pure and Applied Chemistry and the official recommendations of the IUPAC-IUB Combined Commission on Biochemical Nomenclature should be followed.
**Footnotes**
Footnotes should be used sparingly. Number them consecutively throughout the article, using superscript Arabic numbers. 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. Do not include footnotes in the Reference list.

**Table footnotes**
Indicate each footnote in a table with a superscript lowercase letter.

**Artwork**

*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.
- Ensure that color images are accessible to all, including those with impaired color vision.

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/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.

**Illustration services**
Elsevier's Author Services offers Illustration Services to authors preparing to submit a manuscript but concerned about the quality of the images accompanying their article. Elsevier's expert illustrators can produce scientific, technical and medical-style images, as well as a full range of charts, tables and graphs. Image 'polishing' is also available, where our illustrators take your image(s) and improve them to a professional standard. Please visit the website to find out more.
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.

Reference links
Increased discoverability of research and high quality peer review are ensured by online links to the sources cited. In order to allow us to create links to abstracting and indexing services, such as Scopus, CrossRef and PubMed, please ensure that data provided in the references are correct. Please note that incorrect surnames, journal/book titles, publication year and pagination may prevent link creation. When copying references, please be careful as they may already contain errors. Use of the DOI is highly encouraged.

A DOI is guaranteed never to change, so you can use it as a permanent link to any electronic article. An example of a citation using DOI for an article not yet in an issue is: VanDecar J.C., Russo R.M., James D.E., Ambeh W.B., Franke M. (2003). Aseismic continuation of the Lesser Antilles slab beneath northeastern Venezuela. Journal of Geophysical Research, https://doi.org/10.1029/2001JB000884. Please note the format of such citations should be in the same style as all other references in the paper.

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

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

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

Reference Style
1. All publications cited in the text should be presented in a list of references following the text of the manuscript. The manuscript should be carefully checked to ensure that the spelling of author's names and dates are exactly the same in the text as in the reference list.
2. In the text refer to the author's name (without initial) and year of publication, followed – if necessary – by a short reference to appropriate pages. Examples: "Since Peterson (1988) has shown that..." "This is in agreement with results obtained later (Kramer, 1989, pp. 12–16)".
3. If reference is made in the text to a publication written by more than two authors the name of the first author should be used followed by "et al.". This indication, however, should never be used in the list of references. In this list names of first author and co-authors should be mentioned.
4. References cited together in the text should be arranged chronologically. The list of references should be arranged alphabetically on author's names, and chronologically per author. If an author's name in the list is also mentioned with co-authors the following order should be used: publications of the single author, arranged according to publication dates – publications of the same author with one co-author – publications of the author with more than one co-author. Publications by the same author(s) in the same year should be listed as 1974a, 1974b, etc.

5. Use the following system for arranging your references:
   a. For periodicals
   b. For edited symposia, special issues, etc., published in a periodical
   c. For books
   d. For multi-author books

   Data references

6. Abbreviate the titles of periodicals mentioned in the list of references in accordance with BIOSIS Serial Sources, published annually by BIOSIS. The correct abbreviation for this journal is Vet. Immunol. Immunopathol.

7. In the case of publications in any language other than English, the original title is to be retained. However, the titles of publications in non-Latin alphabets should be transliterated, and a notation such as "(in Russian)" or "(in Greek, with English abstract)" should be added.

8. Work accepted for publication but not yet published should be referred to as "in press".

9. References concerning unpublished data and "personal communications" should not be cited in the reference list but may be mentioned in the text.

10. Web references may be given. As a minimum, the full URL is necessary. Any further information, such as Author names, dates, reference to a source publication and so on, should also be given.

11. Articles available online but without volume and page numbers may be referred to by means of their Digital Object identifier (DOI) code.

Formulae

1. Give the meaning of all symbols immediately after the equation in which they are first used.
2. For simple fractions use the solidus (/) instead of a horizontal line.
3. Equations should be numbered serially at the right-hand side in parentheses. In general only equations explicitly referred to in the text need be numbered.
4. The use of fractional powers instead of root signs is recommended. Also powers of e are often more conveniently denoted by exp.

5. Levels of statistical significance which can be mentioned without further explanation are * P<0.05, ** P<0.01 and *** P<0.001.

6. In chemical formulae, valence of ions should be given as, e.g., Ca2+ not as Ca++. Isotope numbers should precede the symbols, e.g., 18O.

7. The repeated writing of chemical formulae in the text is to be avoided where reasonably possible; instead, the name of the compound should be given in full. Exceptions may be made in the case of a very long name occurring very frequently or in the case of a compound are being described as the end product of a gravimetric determination (e.g., phosphate as P2O5).

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.

Additional information
Manuscripts should have numbered lines with wide margins and double spacing throughout, i.e. also for abstracts, footnotes and references. Every page of the manuscript should be numbered. However, in the text no reference should made to page numbers; if necessary, one may refer to sections. Avoid excessive usage of italics to emphasize part of the text. Manuscripts in general should be organized in the following order: Title (should be clear, descriptive and not too long) Name(s) of author(s) Complete postal address(es) of affiliations Full telephone and fax numbers and e-mail address of the corresponding author Present address(es) of author(s) if applicable Correspondence address
including e-mail address to which the proofs should be sent. Abstract Keywords (indexing terms), normally 3–6 items. Introduction Methods, techniques. Results. Discussion. Conclusion. Acknowledgements and any additional information concerning research grants, etc. References. Tables. Figure captions. Tables (separate file(s)). Figures (separate file(s)).

Titles and subtitles should not be run within the text. They should be typed on a separate line, without indentation. Use lower-case letter type. SI units should be used. Elsevier reserves the privilege of returning to the author for revision accepted manuscripts and illustrations which are not in the proper form given in this guide.

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, 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
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