VACCINE

AUTHOR INFORMATION PACK

TABLE OF CONTENTS

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

DESCRIPTION

Vaccine is the pre-eminent journal for those interested in vaccines and vaccination. Submissions to the following categories are welcomed: Human Vaccines - infectious diseases, Human Vaccines - non-infectious diseases, Veterinary Vaccines, Immunology and Animal Models, Vectors, Adjuvants and Delivery Systems, Production, manufacturing, Vaccine Safety, Regulatory, Societal and Legislation Aspects, History of Vaccinology. For more specifics please go to Article Type - Guidelines.

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

Research workers, product developers, clinicians and practitioners with interests in virology, bacteriology, parasitology, mycology, immunology, genetics, biotechnology and biochemistry in the medical and veterinary fields.

IMPACT FACTOR

2016: 3.235 © Thomson Reuters Journal Citation Reports 2017
ABSTRACTING AND INDEXING

ADONIS
AIDS
AIDS Information
Abstracts on Hygiene and Communicable Diseases
BIOSIS
Biotechnology Abstracts
Elsevier BIOBASE
Chemical Abstracts
Current AIDS Literature
Current Contents
Current Opinion in Immunology
Current Opinion in Infectious Diseases
MEDLINE®
Index Veterinarius
EMBASE
Focus on: Veterinary Science and Medicine
Telegen
Tropical Diseases Bulletin
Veterinary Bulletin
Virus Information Exchange Newsletter
SIIC Data Bases
Scopus

EDITORIAL BOARD

Editor-in-Chief:
Gregory A. Poland, Rochester, Minnesota, USA

Managing Editor
Pablo Secades, Amsterdam, Netherlands

Reviews Editor:
Kathleen M. Neuzil, Baltimore, Maryland, USA

Associate Editors:
Danny Altmann, London, UK
Ray Borrow, Manchester, UK
bacterial vaccines and clinical trials
Robert T. Chen, Atlanta, Georgia, USA
Vaccine Safety & Policy
Anthony R. Fooks, Addlestone, Surrey, UK
Zoonosis and neglected tropical diseases
Ken Ishii, Osaka, Japan
adjuvant; Flu vaccine; malaria vaccine; DNA vaccine; regulatory science; innate immunity
Steven Jacobsen, Los Angeles, California, USA
Epidemiology and clinical trials
Bruce Y. Lee, Baltimore, Maryland, USA
Economics, operations research, logistics, modelling, and policy
Anton Middelberg, South Australia, Australia
Vaccine engineering and manufacture; nanoparticle vaccines; nanoemulsions
Ann Oberg, Rochester, Minnesota, USA
Bio statistician
Walter Orenstein, Atlanta, Georgia, USA
polio; measles; improving immunization coverage; vaccine mandates; vaccine safety
Albert Osterhaus, Hannover, Germany
Wildlife virology and virus discovery
Richard Titball, Exeter, UK
vaccines against bacterial pathogens
Sylvia van den Hurk, Saskatoon, Saskatchewan, Canada
human and veterinary vaccines; viral vaccines; immunology and animal models; adjuvants
Council of 100

Carl Alving, Silver Spring, Maryland, USA
Jon K. Andrus, Washington, District of Columbia, USA
Bernard Arulanandam, San Antonio, TX, USA
Subhash Chandra Arya, Delhi, India
Robert L. Atmar, Houston, Texas, USA
Ian Barr, Melbourne, VIC, Australia
Noel Barrett, Orth/Donau, Austria
Kenneth Beagley, Kelvin Grove, Queensland, Australia
Martin Beer, Greifswald-Insel Riems, Germany
Igor Belyakov, Ann Arbor, MI, USA
Steve Black, Cincinnati, OH, USA
Paolo Bonanni, Florence, Italy
Xavier Bosch, Barcelona, Spain
Prosper Boyaka, Columbus, Ohio, USA
David Briles, Birmingham, Alabama, USA
Alexander Bukreyev, Galveston, Texas, USA
Antonella Caputo, Padua, Italy
Antonio Cassone, Perugia, Italy
Yung-Fu Chang, Ithaca, NY, USA
Allan Cripps, Southport, Queensland, Australia
Roy Curtiss III, Gainesville, Florida, USA
Ron Dagan, Beersheba, Israel
Jose de la Fuente, Stillwater, OK, USA
Rik de Swart, Rotterdam, Netherlands
Amanda Dempsey, Aurora, Colorado, USA
Betty Dodet, Lyon, France
Philippe Duclos, Genève 27, Switzerland
Kathryn Edwards, Nashville, TN, USA
Barbara Ensoli, Rome, Italy
Ian Frazer, Woolloongabba, Queensland, Australia
Tong-Ming Fu, West Point, Pennsylvania, USA
Kohtaru Fujishashi, Birmingham, Alabama, USA
James Galen, Baltimore, MD, USA
Jescolo Garcia-Sastre, New York, New York, USA
John W. Glasser, Atlanta, Georgia, USA
Dan Granoff, Oakland, CA, USA
Marie Griffin, Nashville, Tennessee, USA
Carlos Guzman, Braunschweig, Germany
Robert H. Hall, Rockville, MD, USA
Scott Halperin, Halifax, Nova Scotia, Canada
Ali Harandi, Göteborg, Sweden
Jorma Hinkula, Linköping, Sweden
Kiyoko Iwatsuki-Horimoto, Minato-Ku, Japan
Lisa Jackson, Seattle, Washington, USA
Rodrigo Jiménez-Garcia, Madrid, Spain
Mark Jit, London, UK
Yoshihiro Kawaoka, Madison, Wisconsin, USA
Stephen Kent, Melbourne, Victoria, Australia
Ki Hong Kim, Pusan, The Republic of Korea
Dennis Klinman, Frederick, Maryland, USA
Keith Klugman, Seattle, Washington, USA
Eiji Konishi, Osaka, Japan
Thomas Lehner, London, UK
Margaret Liu, Stockholm, Sweden
Pier Luigi Lopalco, Stockholm, Sweden
Shan Lu, Worcester, Massachusetts, USA
Raina MacIntyre, Sydney, New South Wales, Australia
Helena Maltezou, Athens, Greece
Tetsuro Matano, Tokyo, Japan
Janet McElhaney, Farmington, Connecticut, USA
Peter McIntyre, Westmead, New South Wales, Australia
Dennis Metzger, Albany, New York, USA
Mark Miller, Bethesda, Maryland, USA
Anthony Newall, Sydney, New South Wales, Australia
Peter Newman, Toronto, Ontario, Canada
Saad Omer, Atlanta, Georgia, USA
Slobodan Paessler, Galveston, Texas, USA
Peter Palese, New York, New York, USA
Marcela Pasetti, Baltimore, Maryland, USA
Stephen Pelton, Boston, Massachusetts, USA
Michael Pichichero, Rochester, NY, USA
Stanley Plotkin
Maarten Postma, Groningen, Netherlands
Nicola Principi, Milan, Italy
Roman Prymula, Hradec Kralove, Czech Republic
Conrad Quinn, Atlanta, Georgia, USA
Rino Rappuoli
Steven Reed, Seattle, Washington, USA
Arthur Reingold, Berkeley, California, USA
Guus Rimmelzwaan, Rotterdam, Zuid-Holland, Netherlands
Lance Rodewald, Atlanta, Georgia, USA
Ted Ross, Port Saint Lucie, Florida, USA
Mark Rozenbaum, Groningen, The Netherlands
Xavier Saelens, Gent, Belgium
William Schaffner, Nashville, Tennessee, USA
David Scheifele, Vancouver, British Columbia, Canada
Claire-Anne Siegrist, Genève 4, Switzerland
Mark Slifka, Beaverton, Oregon, USA
Kanta Subbarao, Bethesda, Maryland, USA
Andreas Suhrbier, Brisbane, Queensland, Australia
Keipp Talbot, Nashville, Tennessee, USA
Geraldine Taylor, Newbury, UK
Ralph Tripp, Athens, Georgia, USA
Takafumi Tsuboi, Ehime, Japan
Pierre van Damme, Antwerpen, Belgium
Bruce G. Weniger
Cynthia Whitney, Atlanta, Georgia, USA
Sabine Wicker, Frankfurt, Germany
Fred Zepp, Mainz, Germany
Qinjian Zhao, Xiamen, Fujian, China
Gregory Zimet, Indianapolis, Indiana, USA
GUIDE FOR AUTHORS

INTRODUCTION

Vaccine is the most comprehensive and pre-eminent journal for those interested in vaccines and vaccination, serving as an interface between academics, those in research and development, regulatory and governmental agencies, charities, and health and industry professionals.

Types of article

Types of paper

Vaccine publishes primary research papers, review articles, short communications and letters on the following topics: Human Vaccines - infectious diseases Human Vaccines - non-infectious diseases Veterinary Vaccines Immunology and Animal Models Vectors, Adjuvants and Drug Delivery Production, manufacturing and Safety Regulatory, Societal and Legislation Aspects

For more specifics please go to Article Type - Guidelines

Vaccine also welcomes thoughtful Opinion pieces and similar Commentary on topics of interest to the readership of the journal. Authors proposing such work should contact the Editor Dr Poland via(Vitse.Caroline@mayo.edu), in advance of its preparation to describe the general subject of the article in order for a formal solicitation to be made. Authors who wish to submit a Review article should also seek approval of topic before submission. Please send your enquiry to the Reviews Editor kneuzil@som.umaryland.edu. However, the resulting submission is still subject to standard peer review, and the solicitation does not guarantee acceptance for publication. Please note that ALL articles must now carry a single sentence before the article’s bibliography stating: "All authors attest they meet the ICMJE criteria for authorship" and all authors must submit written confirmation in their cover letter that "All authors attest they meet the ICMJE criteria for authorship".

Contact details for submission

Papers should be submitted using the Vaccine online submission system, http://ees.elsevier.com/jvac

10 essentials to ensure fast handling

Manuscript is in accordance with ARTICLE TYPE - GUIDELINES Manuscript-text is saved as a Word-file, line-numbers are added and text is double spaced Clinical trial registry is mentioned at the end of the abstract if applicable Conflict of interest statement is included at the end of the manuscript Figures and tables are prepared as separate files and are clearly labeled Cover letter is prepared, introducing your article and explaining the novelty of the research Keywords are prepared Contact details of 4-6 suggested reviewers (Name, affiliation and email address) are prepared Highlights are prepared (a birds’ eye view of your article in 3-5 points, 85 characters each) The work presented in the article has been carried out in an ethical way

For any further information please consult this Guide For Authors or visit our customer support site at http://support.elsevier.com

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 experiment 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.

Policy and ethics (additional information)
Informed consent
Investigations on human subjects must include a statement indicating that informed consent was obtained after the nature and possible consequences of the studies had been fully explained.

Animal welfare
Authors using experimental animals must state that their care was in accordance with institutional guidelines. For animals subjected to invasive procedures, the anesthetic, analgesic and tranquilizing agents used, as well as the amounts and frequency of administration, must be stated.

Availability of Materials
Publication of an article in Vaccine is taken to imply that the authors are prepared to freely distribute materials used in the published experiments (e.g. antibodies, cell lines) to academic researchers for their own use.

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.

**Contributors**

Each author is required to declare his or her individual contribution to the article: all authors must have materially participated in the research and/or article preparation, so roles for all authors should be described. The statement that all authors have approved the final article should be true and included in the disclosure.

**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.

**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.

All scientific communications describing immunogenicity, effectiveness, or efficacy of a human or veterinary vaccine must include the following details: Vaccine characteristics: Vaccine lot number, manufacturer, dosing interval and number of doses, vaccine route of administration, if an injection - the anatomic site of injection, technique for vaccine administration (if by injection, specify needle length), concomitant vaccines administered, cold chain or storage effects if relevant, and a specification of what vaccine antigens and adjuvants were administered. Subject characteristics: Age, race, ethnicity, body mass index or body weight, smoking status, gender, medical/immunologic status, and concomitant drug use.

**Statistical and analytical reporting**

Author guidelines for statistical and analytical reporting:

**AUTHOR GUIDELINES**

Statistical and analytical guidelines checklist:

**STATISTICAL AND ANALYTICAL GUIDELINES CHECKLIST**

**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.

**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.

**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 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 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 journal offers authors a choice in publishing their research:

**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.

**Open access**
- Articles are freely available to both subscribers and the wider public with permitted reuse.
- An open access publication fee is payable by authors or on their behalf, e.g. by their research funder or institution.

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 (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 2300**, excluding taxes. Learn more about Elsevier's pricing policy: [https://www.elsevier.com/openaccesspricing](https://www.elsevier.com/openaccesspricing).

**Green open access**
Authors can share their research in a variety of different ways and Elsevier has a number of green open access options available. We recommend authors see our [green open access page](https://www.elsevier.com/greenopenaccess) for further information. Authors can also self-archive their manuscripts immediately and enable public access from their institution's repository after an embargo period. This is the version that has been accepted for publication and which typically includes author-incorporated changes suggested during submission, peer review and in editor-author communications. Embargo period: For subscription articles, an appropriate amount of time is needed for journals to deliver value to subscribing customers before an article becomes freely available to the public. This is the embargo period and it begins from the date the article is formally published online in its final and fully citable form. Find out more.

This journal has an embargo period of 12 months.

**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](https://www.elsevier.com/onlineediting/elt) 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](https://www.elsevier.com/about/our-business/editorial-policy). 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://ees.elsevier.com/jvac](http://ees.elsevier.com/jvac)

**Referees**

**Suggestions for potential reviewers**
Authors are invited to provide the names, and e-mail addresses of up to five potential reviewers. It would not be appropriate to nominate individuals that have had any input into the manuscripts submitted or any recent collaboration with the authors. The Editors may or may not take these suggestions into account during the reviewing process.

**Review process**

All contributions are read by two or more referees to ensure both accuracy and relevance, and revisions to the script may thus be required. On acceptance, contributions are subject to editorial amendment to suit house style. When a manuscript is returned for revision prior to final acceptance, the revised version must be submitted as soon as possible after the author’s receipt of the referee’s reports. Revised manuscripts returned after four months will be considered as new submissions subject to full re-review.

**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 wordprocessing software**

It is important that the file be saved in the native format of the wordprocessor 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 wordprocessor’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: http://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. Source files must have "consecutive" line numbering added by authors (this must include tables, captions, references).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 wordprocessor.

**Introduction**

State the objectives of the work and provide an adequate background, avoiding a detailed literature survey or a summary of the results.

**Material and methods**

Provide sufficient detail to allow the work to be reproduced, with details of supplier and catalogue number when appropriate. Methods already published should be indicated by a reference: only relevant modifications should be described.

**Results**

Results should be clear and concise.

**Discussion**

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

**Conclusions**

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

**Essential title page information**

- **Title.** Concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and formulae where possible.
• **Author names and affiliations.** Please clearly indicate the given name(s) and family name(s) of each author and check that all names are accurately spelled. Present the authors’ affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lowercase superscript letter immediately after the author’s name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name and, if available, the e-mail address of each author.

• **Corresponding author.** Clearly indicate who will handle correspondence at all stages of refereeing and publication, also post-publication. **Ensure that 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.

**Abstract**
A concise and factual abstract is required. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

**Graphical abstract**
Although a graphical abstract is optional, its use is encouraged as it draws more attention to the online article. The graphical abstract should summarize the contents of the article in a concise, pictorial form designed to capture the attention of a wide readership. Graphical abstracts should be submitted as a separate file in the online submission system. Image size: Please provide an image with a minimum of 531 × 1328 pixels (h × w) or proportionally more. The image should be readable at a size of 5 × 13 cm using a regular screen resolution of 96 dpi. Preferred file types: TIFF, EPS, PDF or MS Office files. 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 a short collection of bullet points that convey the core findings of the article. Highlights are optional 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.

**Stereochemistry abstract**
For each important chiral compound you are requested to supply a stereochemistry abstract detailing structure, name, formula and all available stereochemical information for eventual incorporation into a database. An abstract for only one enantiomer per compound is required.

**Keywords**
Immediately after the abstract, provide a maximum of 6 keywords, using British 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.).

**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.

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
- 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.
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.

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

A DOI can be used to cite and link to electronic articles where an article is in-press and full citation details are not yet known, but the article is available online. 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.
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 and Zotero, as well as EndNote. Using the word processor 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.

Users of Mendeley Desktop can easily install the reference style for this journal by clicking the following link:
http://open.mendeley.com/use-citation-style/vaccine
When preparing your manuscript, you will then be able to select this style using the Mendeley plug-ins for Microsoft Word or LibreOffice.

Reference formatting
There are no strict requirements on reference formatting at submission. References can be in any style or format as long as the style is consistent. Where applicable, author(s) name(s), journal title/book title, chapter title/article title, year of publication, volume number/book chapter and the pagination must be present. Use of DOI is highly encouraged. The reference style used by the journal will be applied to the accepted article by Elsevier at the proof stage. Note that missing data will be highlighted at proof stage for the author to correct. If you do wish to format the references yourself they should be arranged according to the following examples:

Reference style
Text: 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:
Reference to a website:
Reference to a dataset:
Note shortened form for last page number. e.g., 51–9, and that for more than 6 authors the first 6 should be listed followed by 'et al.' For further details you are referred to 'Uniform Requirements for Manuscripts submitted to Biomedical Journals' (J Am Med Assoc 1997;277:927–34) (see also Samples of Formatted References).

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

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. Before submitting your article, you can deposit the relevant datasets to Mendeley Data. Please include the DOI of the deposited dataset(s) in your main manuscript file. 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.

ARTICLE ENRICHMENTS
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.
Google Maps and KML files
KML (Keyhole Markup Language) files (optional): You can enrich your online articles by providing KML or KMZ files which will be visualized using Google maps. The KML or KMZ files can be uploaded in our online submission system. KML is an XML schema for expressing geographic annotation and visualization within Internet-based Earth browsers. Elsevier will generate Google Maps from the submitted KML files and include these in the article when published online. Submitted KML files will also be available for downloading from your online article on ScienceDirect. More information.

Interactive plots
This journal enables you to show an Interactive Plot with your article by simply submitting a data file. Full instructions.

AFTER ACCEPTANCE

News and embargoes
If you think your article would be interesting for a wider audience, we would be happy to hear from you. Please contact the Journal Manager, John Bailey (jd.bailey@elsevier.com) and we'll send you an information form to complete. You must inform the Journal Manager if you are planning publicity for your article through your institution or funding body. Any publicity materials must be approved by Elsevier before release, and must not be distributed before the article has been published.

Uncorrected proofs of articles are published online on ScienceDirect as soon as they are available. As such, information about embargoes is not available. Authors can track the status of their article via the Track Your Accepted Article service. Uncorrected articles are normally available online within two working days of you receiving the email to download the proofs.

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, 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 Webshop. Corresponding authors who have published their article 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 2014 Elsevier | http://www.elsevier.com