**DESCRIPTION**

*Tetrahedron* publishes full accounts of research having outstanding significance in the broad field of organic chemistry and its related disciplines, such as organic materials and bio-organic chemistry.

Regular papers in *Tetrahedron* are expected to represent detailed accounts of an original study having substantially greater scope and details than that found in a communication, as published in *Tetrahedron Letters*.

*Tetrahedron* also publishes thematic collections of papers as special issues and ‘Reports’, commissioned in-depth reviews providing a comprehensive overview of a research area. **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**

Organic Chemists, Bio-organic Chemists.

**IMPACT FACTOR**

2017: 2.377 © Clarivate Analytics Journal Citation Reports 2018
ABSTRACTING AND INDEXING

MEDLINE®
CAB Abstracts
Chemical Abstracts
Current Contents (Life Sciences, Clinical Medicine)
Current Contents Search
Current Contents/Physics, Chemical, & Earth Sciences
Derwent Drug File
EI Compendex Plus
Excerpta Medica
Pascal
Research Alert
Science Citation Index
SciSearch
AGRICOLA
BIOSIS
Scopus
Reaxys

EDITORIAL BOARD

Editors
G.-Q. Lin, Shanghai Inst. of Organic Chemistry, Chinese Academy of Sciences (CAS), 345 Lingling Road, 200032 Shanghai, China
I. Marek, Technion - Israel Institute of Technology, Haifa, Israel
S.F. Martin, University of Texas at Austin, Austin, Texas, USA
Y. Nakao, Kyoto University, Kyoto, Japan
G.P. Pandey, Sanjay Gandhi Post Graduate Institute of Medical Sciences (SGPGI), Lucknow, India

Reports Editors
M. Christmann, Freie Universität Berlin, Berlin, Germany
J. Hu, Chinese Academy of Sciences (CAS), Shanghai, China
M. Kitamura, Nagoya University, Nagoya, Japan
B.M. Stoltz, California Institute of Technology, Pasadena, California, USA

Advisory Board
M. Banwell, Australian National University, Canberra, Australian Capital Territory, Australia
J. Bode, Eidgenössische Technische Hochschule (ETH) Zürich, Zürich, Switzerland
C. Bolm, RWTH Aachen University (RWTH), Aachen, Germany
S. Buchwald, Massachusetts Institute of Technology, Cambridge, Massachusetts, USA
E. Carreira, Eidgenössische Technische Hochschule (ETH) Zürich, Zürich, Switzerland
S. Chandrasekaran, Indian Institute of Science, Bangalore, India
E.J. Corey, Harvard University, Cambridge, Massachusetts, USA
J. Cossy, Centre National de la Recherche Scientifique (CNRS), Paris, France
D.P. Curran, University of Pittsburgh, Pittsburgh, Pennsylvania, USA
S. Denmark, University of Illinois at Urbana-Champaign, Urbana-Champaign, Illinois, USA
K.L. Ding, Shanghai Institute of Organic chemistry, Shanghai, China
A.M. Echavarren, Institute of Chemical Research of Catalonia (ICIQ), Tarragona, Spain
G.C. Fu, California Institute of Technology, Pasadena, California, USA
N.K. Garg, University of California at Los Angeles (UCLA), Los Angeles, California, USA
L. Ghosez, Institut Européen de Chimie et de Biologie (IECB), Pessac, France
R. Hong, Shanghai Institute of Organic chemistry, Shanghai, China
M. Inoue, The University of Tokyo, Tokyo, Japan
K. Itami, Nagoya University, Nagoya, Japan
M. Krische, University of Texas, Austin, Texas, USA
E. Lee, Seoul National University (SNU), Seoul, The Republic of Korea
S. Ley, University of Cambridge, Cambridge, England, UK
A. Li, Shanghai Institute of Organic chemistry, Shanghai, China
T-Y. Luh, National Taiwan University, Taipei, Taiwan
D. Ma, Shanghai Institute of Organic chemistry, Shanghai, China
D.W.C. MacMillan, Princeton University, Princeton, New Jersey, USA
G. Mehta, University of Hyderabad, Hyderabad, India
N. Miyata, Nagoya City University Medical School, Nagoya, Japan
J.S. Moore, University of Illinois at Urbana-Champaign, Urbana, Illinois, USA
C. Najera, University of Alicante, Alicante, Spain
K. Nicolaou, Rice University, Houston, Texas, USA
P.A. O’Brien, University of York, York, UK
L.E. Overman, University of California at Irvine, Irvine, California, USA
A. Padwa, Emory University, Atlanta, Georgia, USA
I. Paterson, University of Cambridge, Cambridge, England, UK
D.J. Procter, University of Manchester, Manchester, UK
V. Rawal, University of Chicago, Chicago, Illinois, USA
S.E. Reisman, California Institute of Technology, Pasadena, California, USA
M.S. Sanford, University of Michigan, Ann Arbor, Michigan, USA
M. Sawamura, Hokkaido University, Sapporo, Japan
S.L. Schreiber, Harvard University, Cambridge, Massachusetts, USA
E.J. Sorensen, Princeton University, Princeton, New Jersey, USA
K. Suzuki, Tokyo Institute of Technology, Tokyo, Japan
K. Tatsuta, Waseda University, Tokyo, Japan
R.J.K. Taylor, University of York, York, UK
K. Tomioka, Doshisha Women’s College of Liberal Arts, Kyoto, Japan
J. Wang, Peking University, Beijing, China
M.C. White, University of Illinois at Urbana-Champaign, Urbana, Illinois, USA
H.N.C. Wong, The Chinese University of Hong Kong, Hong Kong, China
Z. Xi, Peking University, Beijing, China
H. Yamamoto, Chubu University, Kasugai, Aichi, Japan
Y. Yamamoto, Tohoku University, Sendai, Japan
J.Q. Yu, The Scripps Research Institute, La Jolla, California, USA
Q.L. Zhou, Nankai University, Tianjin, China
GUIDE FOR AUTHORS

INTRODUCTION
Please follow these instructions carefully to ensure that the review and publication of your paper are as swift and efficient as possible. These notes may be copied freely. *Tetrahedron* seeks to publish experimental or theoretical research results of outstanding significance and timeliness in the field of organic chemistry and related disciplines. Publications may be in the form of Articles, Reports, or contributions to Special Issues.

**The contents of papers are the sole responsibility of the authors, and publication shall not imply the concurrence of the Editors or Publisher.**

ARTICLES are expected to represent detailed accounts of an original study in organic chemistry having significant scope and a broad appeal to a diverse readership. Generally such papers will be at least five printed pages, excluding the experimental section and references. Shorter papers should be submitted to *Tetrahedron Letters*.

REPORTS are specially commissioned reviews of research results of topical importance. Such articles are commissioned in appropriate fields by the Editors of *Tetrahedron Reports*.

SPECIAL ISSUES comprise collections of original research papers covering timely areas of organic chemistry. A Guest Editor will invite authors active in the field to submit papers which are then reviewed and processed for publication by the Guest Editor under the usual refereeing system. Opportunity is also provided for other active investigators to submit contributions.

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

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.

Copyright
Upon acceptance of an article, authors will be asked to complete a 'Journal Publishing Agreement' (see more information on this). An e-mail will be sent to the corresponding author confirming receipt of the manuscript together with a 'Journal Publishing Agreement' form or a link to the online version of this agreement.
Subscribers may reproduce tables of contents or prepare lists of articles including abstracts for internal circulation within their institutions. Permission of the Publisher is required for resale or distribution outside the institution and for all other derivative works, including compilations and translations. If excerpts from other copyrighted works are included, the author(s) must obtain written permission from the copyright owners and credit the source(s) in the article. Elsevier has preprinted forms for use by authors in these cases.

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

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

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

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

**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 gold 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.
- The Author is entitled to post the accepted manuscript in their institution's repository and make this public after an embargo period (known as green Open Access). The published journal article cannot be shared publicly, for example on ResearchGate or Academia.edu, to ensure the sustainability of peer-reviewed research in journal publications. The embargo period for this journal can be found below.

**Gold open access**
- Articles are freely available to both subscribers and the wider public with permitted reuse.
- A gold 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 gold 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 gold open access publication fee for this journal is **USD 2450**, 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 open access page 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.](https://www.elsevier.com/openaccess)

This journal has an embargo period of 24 months.

**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](https://www.elsevier.com/) available from Elsevier's WebShop.

Articles must be written in clear, concise, grammatical English. Any author who is not fluent in idiomatic English is urged to gain assistance with manuscript preparation. Reviewers are not expected to correct grammatical errors and any deficiency in this area may detract from the scientific content of the paper.

**Manuscript submission**
Articles: Authors should submit their manuscripts via the online submission page of this journal at [http://ees.elsevier.com/tet](http://ees.elsevier.com/tet). Authors will be guided stepwise through the creation and uploading of the various files. The system automatically converts source files to a single Adobe Acrobat PDF version of the article, which is used in the peer review process. Please note that even though manuscript source files are converted to PDF at submission for the review process, these source files are needed for further processing after acceptance. All correspondence, including notification of the editor's decision and requests for revision, takes place by e-mail and via the author's home page. A printed copy of the manuscript is not required at any stage of the process.

The following items should be submitted via the online submission page:

- **Manuscript.** You are strongly advised to embed the tables/figures/schemes in the relevant position in the manuscript file if possible. This will greatly assist the editorial-review process. Graphic files can also be submitted as separate, highresolution artwork files but please ensure to embed them in the manuscript file also. Please number all manuscript pages consecutively.
- **Graphical abstract** for the contents list (submitted as a separate document).
- **Cover letter:** highlighting the novelty, significance, and urgency of the submitted work, which merits rapid publication and providing details of other relevant information, e.g., submitted or in press manuscripts.
- **List of potential referees** (Separate document).
- **Mol files (optional):** see below.

Templates are provided in order to allow authors to view their paper in a style close to the final printed form. **Their use is optional.** The templates can be found at [https://www.elsevier.com/tetrahedron-templates](https://www.elsevier.com/tetrahedron-templates).

All manuscripts will be fully typeset from the author's electronic files. It should be noted that due to defined typesetting standards and the complex requirements of electronic publishing, the Publisher will not always be able to exactly match the layout the author has submitted. In particular, in the finished journal article, figures and tables are usually placed at the top or bottom of pages. The template is only intended to be used in assisting with the preparation and submission of manuscripts.
It should be noted that the use of the journal template is not a requirement and its adoption will neither speed nor delay publication. Elsevier can handle most major word processing packages and in general most formatting applied by authors for style and layout is replaced when the article is being typeset. These templates contain a large number of macros. To ensure successful PDF conversion by the online submission system, it is important that the author saves a new document based on the template, rather than saving the template itself. To use the template, the author should save the final document as a Word file with a ".doc" extension (rather than the ".dot" extension). Please use TrueType fonts in order to avoid problems with the creation of the PDF.

Please ensure that the graphical abstract is included as page 1 of your manuscript when submitting online. For further instructions on the preparation of electronic artwork please see https://www.elsevier.com/artworkinstructions.

Tetrahedron Reports: Reports (except for the Americas) should be submitted to the online submission page of this journal at http://ees.elsevier.com/tet. When submitting, please select the article type "Report". Your article will then be sent to the Editor for your region:

For the Americas: Please e-mail your Report, together with a covering letter including the names of 6 potential reviewers to Professor B. Stoltz, stoltz@caltech.edu, Division of Chemistry and Chemical Engineering, California Institute of Technology, USA.

Preparation

General requirements: The corresponding author's full mailing address, including mail codes, phone number, fax number, and e-mail address should be included. Authors are asked to provide four keywords, which will be used for indexing purposes. The manuscript should be compiled in the following order: Graphical Abstract, Title, Authors, Affiliations, Abstract, Keywords, Introduction, Results, Discussion, Conclusion, Experimental, Acknowledgments, References and Notes, Tables, Legends, Figures, and Schemes.

Title: The title should be brief, specific, and rich in informative words; it should not contain any literature references or compound numbers.

Authors and affiliations: Where possible, supply given names, middle initials, and family names for complete identification. Use superscript lowercase letters to indicate different addresses, which should be as detailed as possible and must include the country name. The corresponding author should be indicated with an asterisk, and contact details (fax, e-mail) should be placed in a footnote. Information relating to other authors (e.g., present addresses) should be placed in footnotes indicated by the appropriate symbols (see below).

Abstracts: Authors must include a short abstract of approximately four to six lines that states briefly the purpose of the research, the principal results, and major conclusion(s). References and compound numbers should not be mentioned in the abstract unless full details are given.

Text should be subdivided in the simplest possible way consistent with clarity. Headings and subheadings should reflect the relative importance of the sections, and all headings should be numbered. In the introductory section of the manuscript, the author should strive to define the significance of the work and the justification for its publication. Any background discussion should be brief and restricted to pertinent material. Ensure that all tables, figures, and schemes are cited in the text in numerical order. The preferred position for chemical structures should be indicated. Please ensure that manuscript pages are numbered consecutively. Trade names should have an initial capital letter. All measurements and data should be given in SI units where possible, or in other internationally accepted units. Abbreviations should be used consistently throughout the text, and all non-standard abbreviations should be defined on first usage. Authors are requested to draw attention to hazardous materials or procedures by adding the word CAUTION followed by a brief descriptive phrase and literature references if appropriate.

Reports: When submitting a Tetrahedron report, authors should include biographical information for each author as well as a black-and-white photograph. Each biography should be one paragraph (approximately 150-200 words) and should include date and place of birth, universities attended, degrees obtained, principal professional posts held, present title, a line or two about the major research interests, and anything else professionally relevant that is of special interest. Authors must
supply a graphical abstract when the report is first submitted, which will summarise the contents of the report in a concise pictorial form (see provisos section: Manuscript preparation: Graphical Abstracts for more detailed information).

**Experimental Procedures and Compound Characterization**

Upon manuscript submission, the authors must provide all data required to allow the reviewers and readers of the journal to understand and replicate the research presented in the article. Experimental procedures and spectral characterization of all new compounds are mandatory and must be included in an Experimental Section at the end of the main body of the text. Experimental procedures should be described in sufficient detail to ensure reproducibility. Reactant quantities, volumes, purification methods, product descriptions, quantities and isolated yields (%) should be included. All new compounds must be fully characterized with relevant spectroscopic data in order to provide convincing evidence for both their purity and identity. These data will normally include lists of: $^1$H and $^{13}$C NMR peaks, HRMS or elemental analysis data, indicative IR absorptions, and melting points where appropriate. For enantiomerically enriched substances, data used to determine absolute configuration and enantiomeric ratios or excesses should be given, including specific rotation values and, where appropriate, HPLC details (including retention times, solvent, flow rate and the chiral support). Spectral data for known compounds that are prepared by new procedures need not be supplied, but the authors must state what spectral data are consistent with the literature and provide the appropriate reference.

**Abbreviations:** Standard ACS abbreviations should be used throughout the manuscript and are employed without periods. The preferred forms for some of the more commonly used abbreviations are mp, bp, $^\circ$C, K, min, h, mL, μL, g, mg, μg, cm, mm, nm, mol, mmol, μmol, M, mM, μM, ppm, HPLC, TLC, GC, 1H NMR, GC-MS, HRMS, FABHRMS, UV, IR, EPR, ESR, DNase, ED50, ID50, IC50, LD50, im, iv, mRNA, RNase, rRNA, tRNA, cpm, Ci, dpm, Vmax, Km, k, t1/2. All non-standard abbreviations should be defined following the first use of the abbreviation. For a detailed listing of standard abbreviations, see The ACS Style Guide; American Chemical Society: Washington, DC, 1997.

**References and notes:** In the text, references should be indicated by superscript Arabic numerals which run consecutively through the paper and appear after any punctuation. Please ensure that all references are cited in the text and vice versa. The reference list should preferably contain only literature references, although other information (e.g., experimental details) can be placed in this section. Preferably, each reference should contain only one literature citation. Authors are expected to check the original source reference for accuracy. Journal titles should be abbreviated according to American Chemical Society guidelines (The ACS Style Guide; Dodd, J. S., Ed.; American Chemical Society: Washington DC, 1997). A list of currently accepted journal abbreviations may be found the journal home page at https://www.elsevier.com/locate/tet. Formatting for common references are shown below.

**Scientific articles:**

**Books:**

**Patent/Chem. abstract:**

**Meeting abstract:**

**Citing and listing of Web references:** As a minimum, the full URL should be given. Any further information, if known (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.
The digital object identifier (DOI) may be used to cite and link to electronic documents. The DOI consists of a unique alphanumeric character string which is assigned to a document by the publisher upon the initial electronic publication. The assigned DOI never changes. Therefore, it is an ideal medium for citing a document, particularly "Articles in press" because they have not yet received their full bibliographic information. The correct format for citing a DOI is shown as follows (example taken from a document in the journal *Physics Letters B*):

https://doi.org/10.1016/j.physletb.2003.10.071

When you use the DOI to create URL hyperlinks to documents on the web, they are guaranteed never to change.

**Footnotes**: Footnotes should appear at the bottom of the appropriate page and be indicated by the following symbols: asterisk, dagger, double dagger, section sign, paragraph, parallels.

**Tables**: All tables should be cited in the text, and numbered in order of appearance with Arabic numerals. All table columns should have a brief explanatory heading and, where appropriate, units of measurement. Vertical lines should not be used. Footnotes to tables should be typed below the table and should be referred to by superscript letters. Each table should have a descriptive heading, which, together with the individual column headings, should make the table, as nearly as possible, self-explanatory. In setting up tabulations, authors are requested to keep in mind the column widths (8.4 cm and 17.7 cm), and to make the table conform to the limitations of these dimensions.

**Legends**: Legends for figures and schemes should be grouped together separately.

**Artwork**: Figures, schemes, and equations must be cited in the text and numbered in order of appearance with Arabic numerals. Other graphics, such as structures, do not need to be numbered, but please indicate in the text where these are to appear. All graphics (including chemical structures) must be provided at the actual size that they are to appear (single-column width is 8.4 cm, double-column width is 17.7 cm). Please arrange schematics so that they fill the column space (either single or double), so as not to leave a lot of unused white space. Please ensure that all illustrations within a paper are consistent in type, quality, and size. Legends should not be included as part of the graphic; instead all legends should be supplied at the end of the text.

To help authors provide actual size graphics, it is suggested that the following settings be used with CSC ChemDraw and ISIS Draw: font 10 pt Helvetica, chain angle 120°, bond spacing 18% of length, fixed length 10.08 pt (0.354 cm), bold width 1.4 pt (0.049 cm), line width 0.42 pt (0.015 cm), margin width 1.12 pt (0.040 cm), and hash spacing 1.75 pt (0.062 cm). Compound numbers should be in boldface. In order to accurately design schematics to print out at the proper width, the original drawing cannot exceed a column width of 8.4 cm (for single column) and 17.7 cm (for double column). Layout design is facilitated if authors submit their original artwork in the actual size to be published. Please save graphics as an Encapsulated PostScript file (EPS) or a Tagged Image File Format (TIFF), as well as the program the graphic was originally drawn in. For more details on the preparation and submission of artwork, please visit [https://www.elsevier.com/artworkinstructions](https://www.elsevier.com/artworkinstructions).

**Colour**: Colour figures should be supplied in electronic format as JPEG files (minimum 300 dots per inch).

- **In print**: Colour figures may be printed in the journal at no charge to the author, provided that the editor considers the colour necessary to convey scientific information.
- **On the Web**: Any figure can appear free of charge in colour in the Web version of your article (e.g., on ScienceDirect), regardless of whether or not this is reproduced in colour in the printed version. Please note that if you do not opt for colour in print, you should submit relevant figures in both colour (for the Web) and black and white (for print).

**Journal conventions**

**Nomenclature**: It is the responsibility of the authors to provide correct nomenclature. Chemical names for drugs are preferred. If these are not practical, generic names, names approved by the U.S. Adopted Names Council, or those approved by the World Health Organization may be used. If a generic name is used, its chemical name or structure should be provided at the point of first citation. Authors will find the following as useful reference books for recommended nomenclature.
X-ray crystallographic data: Prior to submission of the manuscript, the author should deposit crystallographic data for organic and metalorganic structures with the Cambridge Crystallographic Data Centre. The data, without structure factors, should be sent by e-mail to deposit@ccdc.cam.ac.uk, as an ASCII file, preferably in CIF format. Hard copy data should be sent to CCDC, 12 Union Road, Cambridge CB2 1EZ. A checklist of data items for deposition can be obtained from the CCDC Home Page on the World Wide Web (http://www.ccdc.cam.ac.uk) or by e-mail to: fileserv@ccdc.cam.ac.uk, with the one-line message, send me checklist. The data will be acknowledged, within three working days, with one CCDC deposition number per structure deposited. These numbers should be included with the following standard text in the manuscript: Crystallographic data (excluding structure factors) for the structures in this paper have been deposited with the Cambridge Crystallographic Data Centre as supplementary publication nos. CCDC. Copies of the data can be obtained, free of charge, on application to CCDC, 12 Union Road, Cambridge CB2 1EZ, UK. (fax: +44-(0)1223-336038 or e-mail: deposit@ccdc.cam.ac.uk). Deposited data may be accessed by the journal and checked as part of the refereeing process. If data are revised prior to publication, a replacement file should be sent to CCDC.

Characterization of new compounds: All new compounds should be fully characterized with relevant spectroscopic data. Microanalyses should be included whenever possible. Under appropriate circumstances, high-resolution mass spectra may serve in lieu of microanalysis, if accompanied by suitable NMR criteria for sample homogeneity.

DNA sequences and GenBank Accession numbers: Many Elsevier journals cite “gene accession numbers” in their running text and footnotes. Gene accession numbers refer to genes or DNA sequences about which further information can be found in the databases at the National Center for Biotechnical Information (NCBI) at the National Library of Medicine. Elsevier authors wishing to enable other scientists to use the accession numbers cited in their papers via links to these sources, should type this information in the following manner:

For each and every accession number cited in an article, authors should type the accession number in **bold, underlined text**. Letters in the accession number should always be capitalised. (See Example below). This combination of letters and format will enable Elsevier’s typesetters to recognise the relevant texts as accession numbers and add the required link to GenBank’s sequences.

Example: “(GenBank accession nos. **AI631510**, **AI631511**, **AI632198**, and **BF223228**), a B-cell tumor from a chronic lymphatic leukemia (GenBank accession no. BE675048), and a T-cell lymphoma (GenBank accession no. AA361117)”. Authors are encouraged to check accession numbers used very carefully. **An error in a letter or number can result in a dead link.** In the final version of the **printed article**, the accession number text will not appear bold or underlined. In the final version of the **electronic copy**, the accession number text will be linked to the appropriate source in the NCBI databases enabling readers to go directly to that source from the article.

Software: Software used as part of computer-aided drug/agent design (e.g., molecular modelling, QSAR, conformational analysis, molecular dynamics) should be readily available from accepted sources and the authors may specify where the software can be obtained. Assurance of the quality of the parameters employed for the relevant potential functions should be detailed in the manuscript.

Electronic Supplementary Information (ESI)

Experimental procedures for preparing known compounds by a different method may be included in the **Electronic Supplementary Information (ESI)**. High resolution copies of $^1$H and $^{13}$C NMR spectra for all new compounds must also be provided in the ESI. High resolution copies of $^1$H NMR spectra for known compounds prepared by new procedures must also be furnished as evidence of purity. Each spectrum must be clearly labelled with the structure and compound number. All compound peaks must be integrated ($^1$H NMR), and all resonances should be peak-picked ($^1$H and $^{13}$C NMR). Chromatograms and other supporting data may be included as needed. The inclusion of an ESI section is compulsory for submission to *Tetrahedron* and will be subject to peer review.
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.

Article structure
Subdivision - numbered sections
Divide your article into clearly defined and numbered sections. Subsections should be numbered 1.1 (then 1.1.1, 1.1.2, ...), 1.2, etc. (the abstract is not included in section numbering). Use this numbering also for internal cross-referencing: do not just refer to 'the text'. Any subsection may be given a brief heading. Each heading should appear on its own separate line.

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

Theory/calculation
A Theory section should extend, not repeat, the background to the article already dealt with in the Introduction and lay the foundation for further work. In contrast, a Calculation section represents a practical development from a theoretical basis.

Results
Results should be clear and concise.

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

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

Appendices
If there is more than one appendix, they should be identified as A, B, etc. Formulae and equations in appendices should be given separate numbering: Eq. (A.1), Eq. (A.2), etc.; in a subsequent appendix, Eq. (B.1) and so on. Similarly for tables and figures: Table A.1; Fig. A.1, etc.

Vitae
For Reports only: include in the manuscript a short (maximum 100 words) biography of each author, along with a passport-type photograph accompanying the other figures.

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 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. 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 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.

**Graphical abstract**

A graphical abstract is mandatory for this journal. It should summarize the contents of the article in a concise, pictorial form designed to capture the attention of a wide readership online. Authors must provide images that clearly represent the work described in the article. 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 also in accordance with all technical requirements.

**Keywords**

Immediately after the abstract, provide a maximum of 6 keywords, using American spelling and avoiding general and plural terms and multiple concepts (avoid, for example, 'and', 'of'). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes.

**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.

**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/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.

**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.

**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.

**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.

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

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

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

Below are a number of ways in which you can associate data with your article or make a statement about the availability of your data when submitting your manuscript. If you are sharing data in one of these ways, you are encouraged to cite the data in your manuscript and reference list. Please refer to the "References" section for more information about data citation. For more information on depositing, sharing and using research data and other relevant research materials, visit the research data page.
Data linking
If you have made your research data available in a data repository, you can link your article directly to the dataset. Elsevier collaborates with a number of repositories to link articles on ScienceDirect with relevant repositories, giving readers access to underlying data that gives them a better understanding of the research described.

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

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

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

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

For more information, visit the Mendeley Data for journals page.

Data in Brief
You have the option of converting any or all parts of your supplementary or additional raw data into one or multiple data articles, a new kind of article that houses and describes your data. Data articles ensure that your data is actively reviewed, curated, formatted, indexed, given a DOI and publicly available to all upon publication. You are encouraged to submit your article for Data in Brief as an additional item directly alongside the revised version of your manuscript. If your research article is accepted, your data article will automatically be transferred over to Data in Brief where it will be editorially reviewed and published in the open access data journal, Data in Brief. Please note an open access fee of 500 USD is payable for publication in Data in Brief. Full details can be found on the Data in Brief website. Please use this template to write your Data in Brief.

MethodsX
You have the option of converting relevant protocols and methods into one or multiple MethodsX articles, a new kind of article that describes the details of customized research methods. Many researchers spend a significant amount of time on developing methods to fit their specific needs or setting, but often without getting credit for this part of their work. MethodsX, an open access journal, now publishes this information in order to make it searchable, peer reviewed, citable and reproducible. Authors are encouraged to submit their MethodsX article as an additional item directly alongside the revised version of their manuscript. If your research article is accepted, your methods article will automatically be transferred over to MethodsX where it will be editorially reviewed. Please note an open access fee is payable for publication in MethodsX. Full details can be found on the MethodsX website. Please use this template to prepare your MethodsX article.

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

AFTER ACCEPTANCE
**Online proof correction**

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 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 gold open access do not receive a Share Link as their final published version of the article is available open access on ScienceDirect and can be shared through the article DOI link.

**AUTHOR INQUIRIES**

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

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