DESCRIPTION

Clinica Chimica Acta is a high quality journal which publishes original Research Communications in the field of clinical chemistry and laboratory medicine, defined as the diagnostic application of chemistry, biochemistry, immunochemistry, biochemical aspects of hematology, toxicology, and molecular biology to the study of human disease in body fluids and cells.

The objective of the journal is to publish novel information leading to a better understanding of biological mechanisms of human diseases, their prevention, diagnosis, and patient management. Reports of an applied clinical character are also welcome. Papers concerned with normal metabolic processes or with constituents of normal cells or body fluids, such as reports of experimental or clinical studies in animals, are only considered when they are clearly and directly relevant to human disease. Evaluation of commercial products have a low priority for publication, unless they are novel or represent a technological breakthrough. Studies dealing with effects of drugs and natural products and studies dealing with the redox status in various diseases are not within the journal's scope. Development and evaluation of novel analytical methodologies where applicable to diagnostic clinical chemistry and laboratory medicine, including point-of-care testing, and topics on laboratory management and informatics will also be considered.

AUDIENCE

Medical biochemists, clinical chemists, analytical chemists.

IMPACT FACTOR

2018: 2.735 © Clarivate Analytics Journal Citation Reports 2019
ABSTRACTING AND INDEXING

EMBiology
Elsevier BIOBASE
BIOSIS Citation Index
Chemical Abstracts
Current Contents - Life Sciences
Embase
Index Chemica
PubMed/Medline
Clinical Chemistry Lookout
Current Clinical Chemistry
Informedicus
Pascal Francis
Reference Update
Scopus

EDITORIAL BOARD

Editors-in-Chief
Joris Delanghe, University Hospital Ghent, Gent, Belgium
Alan H. Wu, SAN FRANCISCO GENERAL HOSPITAL, San Francisco, California, United States

Reviews Editor
Greg Makowski, HARTFORD HOSPITAL, Hartford, Connecticutt, United States

Editors
Marc De Buyzere, University Hospital Ghent, Gent, Belgium
Ming Guan, Huashan Hospital Fudan University, Shanghai, China
Ching-Wan Lam, University of Hong Kong, Hong Kong, Hong Kong

Statistics Editor
Hans Pottel, KU Leuven, Department of Public Health and Primary Care, Kortrijk, Belgium

Editorial Board
Samir Awadallah, University of Sharjah, Sharjah, United Arab Emirates
Hassan Azzazy, The American University in Cairo, New Cairo, Egypt
Sergio Bernardini, University of Rome Tor Vergata, Roma, Italy
R. Blankenstein, VU University Medical Center Amsterdam, Amsterdam, Netherlands
Claude Bohuon, Paris, France
David Bullock, UK NEQAS, Director Wolfson EQA Lab., Edgbaston, United Kingdom
Joiza Camargo, Clinics Hospital of Porto Alegre, PORTO ALEGRE, Brazil
E. Cavalier, CHU de Liège, Liege, Belgium
Chun-Wen Cheng, Chung Shan Medical University, Taichung Taiwan
Jaw-Wen Chen, Taipei Veterans General Hospital, Taipei Taiwan
Theodore Christopoulos, University of Patras, Dept. of Chemistry, Rio-Patras, Greece
Christa Cobbaert, Leiden University Medical Center Department of Cardiology, Leiden, Netherlands
William Coleman, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, United States
John Contois, Liposcience Inc., Raleigh, North Carolina, United States
Gyorgy Csako, National Institutes of Health, Bethesda, Maryland, United States
Amitava Dasgupta, University of Texas Health Science Center at Houston, Houston, Texas, United States
Edson da Silva, Federal University of Santa Catarina, FLORIANOPOLIS, Brazil
Sridevi Devaraj, BAYLOR COLLEGE OF MEDICINE, Houston, Texas, United States
James Donnelly, Quotient, Clinical and Regulatory Affairs, Quotient Suisse SA, Eysins, Switzerland
Rajiv T. Erasmus, Stellenbosch University, Stellenbosch, South Africa
Tze Kiong Er, Kaohsiung Medical University, Kaohsiung, Taiwan
Philippe Gillyery, Reims Champagne-Ardenne University, Reims, France
Ernesto Gonzalez Reyes, Immunoassay Center, Dept. of Neonatal Screening, Havana City, Cuba
Peter Hickman, Australian National University, Canberra, Australia
Mario Hirata, University of Sao Paulo, SAO PAULO, Brazil
Yih-Shou Hsieh, Chung Shan Medical University, Taichung Taiwan
Akihiro Inazu, Kanazawa University, Grad. School of Medical Science, Ishikawa, Japan
Inho Jo, Korean National Institute of Health, Dept. of Biomedical Sciences, Seoul, Korea, Republic of
Saeed Jortani, University of Louisville, Louisville, Kentucy, United States
Jau-Tsuen Kao, National Taiwan University, Taipei, Taiwan
Ishmael Kasvosve, University of Zimbabwe, Harare, Zimbabwe
Jin Kim, Seoul National University (SNU), Dept. of Clinical Pathology, Jongno-Gu, Seoul, Korea, Republic of
Gerald Kost, Davis, California, United States
Gert Kostner, Graz University of Technology, Graz, Austria
Maode Lai, Zhejiang University School of Medicine, Hangzhou, China
Michel Langlois, General Hospital Saint-Jan, Brugge, Belgium
Jian-Jun Li, Fu Wai Hospital, Dept. of Cardiology, Beijing, China
Stephen Li, The Sydney Children’s Hospitals Network Randwick and Westmead, Westmead, Australia
Masato Maekawa, Hamamatsu University School of Medicine, Hamamatsu, Japan
Q. Meng, University of Texas MD Anderson Cancer Center, Houston, TX, United States
Takashi Miida, Juntendo University, Bunkyo-Ku, Japan
Mathias Müller, Austrian Society of Quality Assurance and Standardisation, OQUASTA, Wien, Austria
Michele Mussap, University of Cagliari, Laboratory Medicine, Department of Surgical Sciences, Faculty of Medicine and Surgery, Calgari, Italy
Katsuyuki Nakajima, Tokai University School of Medicine, Dept. of Forensic Medicine, Maebashi, Gunma, Japan
Nobuo Okumura, Shinshu University, School of Health Sciences, Matsumoto, Japan
Jorge Ordonez-Llanos, Hospital de Sant Pau, Dept. of Biochemistry, Barcelona, Spain
Mauro Panteghini, University of Milan, Milan, Italy
Oscar Perez-Mendez, Ignacio Chavez National Institute for Cardiology, Ciudad de Mexico, Mexico
Tahir Pillay, University of Pretoria, Pretoria, South Africa
Christopher Price, Daglingworth, Cirencester, UK
Kari Pullki, University of Eastern Finland Unit of Clinical Medicine, Kuopio, Finland
Pete Rainey, UNIVERSITY OF WASHINGTON, Seattle, Washington, United States
Luis Salazar, University of the Frontier, Temuco, Chile
Niilo Saris, University of Helsinki, Helsinky, Finland
Lawrence Silverman, Virginia Commonwealth University, Health Sciences Center, Charlottesville, Virginia, United States
Patrick Sluss, Massachusetts General Hospital, Pathology Core Labs., Boston, Massachusetts, United States
Lori Sokoll, Johns Hopkins University School of Medicine, Baltimore, Maryland, United States
John Toffaletti, Duke University, Durham, North Carolina, United States
Minoru Tozuka, Tokyo Medical and Dental University, Bunkyo-Ku, Japan
Li-Yu Tsai, Kaohsiung Medical University, Kaohsiung Taiwan
Bin Wang, Nanjing Medical University, Nanjing, China
Xiaoping Wang, Shaanxi University of Chinese Medicine, Xianyang, China
Philip Wenham, Victoria Hospital, Kirkcaldy, United Kingdom
William Winter, UNIVERSITY OF FLORIDA, Gainesville, Florida, United States
Steven Wong, Wake Forest University School of Medicine, Winston-Salem, North Carolina, United States
Stuart Woodhead, Invitron Limited, Monmouth, United Kingdom
Jiaxi Wu, Chinese Academy of Sciences (CAS), Shanghai Clinical Center, Shangahi, China
INTRODUCTION

Clinica Chimica Acta is a high quality journal which publishes original Research Communications in the field of clinical chemistry and laboratory medicine, defined as the diagnostic application of chemistry, biochemistry, immunochemistry, biochemical aspects of hematology, toxicology, and molecular biology to the study of human disease in body fluids and cells. The objective of the journal is to publish novel information leading to a better understanding of biological mechanisms of human diseases, their prevention, diagnosis, and patient management. Reports of an applied clinical character are also welcome. Papers concerned with normal metabolic processes or with constituents of normal cells or body fluids, such as reports of experimental or clinical studies in animals, are only considered when they are clearly and directly relevant to human disease. Evaluation of commercial products have a low priority for publication, unless they are novel or represent a technological breakthrough. Studies dealing with effects of drugs and natural products and studies dealing with the redox status in various diseases are not within the journal's scope. Development and evaluation of novel analytical methodologies where applicable to diagnostic clinical chemistry and laboratory medicine, including point-of-care testing, and topics on laboratory management and informatics will also be considered.

Types of paper

Full-length research articles, Review articles, Brief Reports and Case Reports.

Reports of new or improved methods should be as brief as is consistent with clarity (up to about 1,000 words). They should unequivocally identify the element of novelty claimed and the advantages over existing technology. Performance characteristics, including effects of interfering substances, comparisons with results of accepted methods and references values based on appropriate population samples should be documented by adequate data. Citing of earlier publications is preferred to repetition of details for reagents, procedures, etc., which are always in print. Nevertheless, the information provided must suffice to allow readers to duplicate the work or to compare the technique with current practice.

Reviews are normally invited, however the Reviews Editor welcomes suggestions of potential topics and potential authors.

Contact details for submission

Papers should be submitted using the Clinica Chimica Acta online submission system http://ees.elsevier.com/cca. For questions on the submission and reviewing process, please contact the relevant Editorial Office.

For the Americas, Japan and Asia:
Alan H. Wu, San Francisco General Hospital us-cca@comcast.net

For Europe, Australia and all other territories:
Joris Delanghe, University Hospital Gent joris.delanghe@ugent.be

Reviews from all areas:
Greg S. Makowski Gmakowski@clpct.com

Please note that reviews are normally invited, however the Reviews Editor welcomes suggestions of potential topics and potential authors.

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.

**Policy and ethics**
The work described in your article must have been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for experiments involving humans [http://www.wma.net/e/policy/b3.htm](http://www.wma.net/e/policy/b3.htm);
Uniform Requirements for manuscripts submitted to Biomedical journals [http://www.icmje.org](http://www.icmje.org) published by the International Committee of Medical Journal Editors. This must be stated at an appropriate point in the article.

Please note: *Clinica Chimica Acta* does not accept submission of papers based on animal studies.

**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').

Authorship
All authors should have made substantial contributions to all of the following: (1) the conception and design of the study, or acquisition of data, or analysis and interpretation of data, (2) drafting the article or revising it critically for important intellectual content, (3) final approval of the version to be submitted.

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

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

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 3550, excluding taxes. Learn more about Elsevier's pricing policy: 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.

This journal has an embargo period of 12 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 available from Elsevier's WebShop.

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.

Referees
A minimum of three suitable potential reviewers must be supplied (please provide their name, email addresses, and institutional affiliation). When compiling this list of potential reviewers please consider the following important criteria: they must be knowledgeable about the manuscript subject area; must not be from your own institution; at least two of the suggested reviewers should be from another country than the authors'; and they should not have recent (less than four years) joint publications with any of the authors. However, the final choice of reviewers is at the editors' discretion.

PREPARATION

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

Use of word processing software
It is important that the file be saved in the native format of the word processor used. The text should be in single-column format. Keep the layout of the text as simple as possible. Most formatting codes will be removed and replaced on processing the article. In particular, do not use the word processor's options to justify text or to hyphenate words. However, do use bold face, italics, subscripts, superscripts etc. When preparing tables, if you are using a table grid, use only one grid for each individual table and not a grid for each row. If no grid is used, use tabs, not spaces, to align columns. The electronic text should be prepared in a way very similar to that of conventional manuscripts (see also the Guide to Publishing with Elsevier). Note that source files of figures, tables and text graphics will be required whether or not you embed your figures in the text. See also the section on Electronic artwork.

To avoid unnecessary errors you are strongly advised to use the 'spell-check' and 'grammar-check' functions of your word processor.

Article structure

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

Introduction
State the objectives of the work and provide an adequate background, avoiding a detailed literature survey or a summary of the results.
Material and methods
Provide sufficient detail to allow the work to be reproduced, with details of supplier and catalogue number when appropriate. Methods already published should be indicated by a reference: only relevant modifications should be described.

Patients
If human subjects were used in the experiment please make a statement to the effect that this study has been cleared by your Institution Ethics Review Board for human studies and that patients have signed an informed consent. These are required by standards.

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.

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 mandatory for this journal. They consist of a short collection of bullet points that convey the core findings of the article and should be submitted in a separate editable file in the online submission system. Please use 'Highlights' in the file name and include 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point). You can view example Highlights on our information site.

Abstract
A concise and factual abstract is required and should have no more than 200 words. 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 x w) or proportionally more. The image should be readable at a size of 5 ×
13 cm using a regular screen resolution of 96 dpi. Preferred file types: TIFF, EPS, PDF or MS Office
files. You can view Example Graphical Abstracts on our information site.
Authors can make use of Elsevier's Illustration Services to ensure the best presentation of their images
and in accordance with all technical requirements.

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

**Abbreviations**
Define abbreviations that are not standard in this field in a footnote to be placed on the first page
of the article. Such abbreviations that are unavoidable in the abstract must be defined at their first
mention there, as well as in the footnote. Ensure consistency of abbreviations throughout the article.

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

**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.

**Nomenclature and units**
These should be in conformity with international practice relating to the use of SI units: thus
concentrations of solutes of known molecular mass should normally be stated in mol/l or recognized
submultiples thereof (nmol/l, etc.). Other solutes should be expressed in g/l, mg/l, etc. Reagent
composition may be specified either in molar terms or in mass or volume of each solute per liter of
final solution (% or w% should not be used). Enzyme activities should be reported in katal or U/l
whenever possible and should be accompanied by a reference to, or a description of, the procedure
used for the measurements.

**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/half-tone (color or grayscale), keep to a minimum of 500 dpi.
Please do not:
• Supply files that are optimized for screen use (e.g., GIF, BMP, PICT, WPG); these typically have a low number of pixels and limited set of colors;
• Supply files that are too low in resolution;
• Submit graphics that are disproportionately large for the content.

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

Figure captions
Ensure that each illustration has a caption. Supply captions separately, not attached to the figure. A caption should comprise a brief title (not on the figure itself) and a description of the illustration. Keep text in the illustrations themselves to a minimum but explain all symbols and abbreviations used.

Tables
Please submit tables as editable text and not as images. Tables can be placed either next to the relevant text in the article, or on separate page(s) at the end. Number tables consecutively in accordance with their appearance in the text and place any table notes below the table body. Be sparing in the use of tables and ensure that the data presented in them do not duplicate results described elsewhere in the article. Please avoid using vertical rules and shading in table cells.

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

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

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

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

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

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

Reference style
Text: 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.
Example: '..... as demonstrated [3,6]. Barnaby and Jones [8] obtained a different result ....'
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 journal publication with an article number:
Reference to a book:
Reference to a chapter in an edited book:
Reference to a website:

Reference to a dataset:


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

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

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

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. During the submission process, after uploading your manuscript, you will have the opportunity to upload your relevant datasets directly to Mendeley Data. The datasets will be listed and directly accessible to readers next to your published article online.

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

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

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

AFTER ACCEPTANCE

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

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

We will do everything possible to get your article published quickly and accurately. Please use this proof only for checking the typesetting, editing, completeness and correctness of the text, tables and figures. Significant changes to the article as accepted for publication will only be considered at this stage with permission from the Editor. It is important to ensure that all corrections are sent back to us in one communication. Please check carefully before replying, as inclusion of any subsequent corrections cannot be guaranteed. Proofreading is solely your responsibility.

Offprints
The corresponding author, at no cost, will be provided with a PDF file of the article via e-mail (the PDF file is a watermarked version of the published article and includes a cover sheet with the journal cover image and a disclaimer outlining the terms and conditions of use). For an extra charge, paper offprints can be ordered via the offprint order form which is sent once the article is accepted for publication.
Both corresponding and co-authors may order offprints at any time via Elsevier's WebShop. Authors requiring printed copies of multiple articles may use Elsevier WebShop's 'Create Your Own Book' service to collate multiple articles within a single cover.

**AUTHOR INQUIRIES**

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

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