**DESCRIPTION**

*Food Chemistry* has an open access mirror *Food Chemistry: X*, sharing the same aims and scope, editorial team, submission system and rigorous peer review.

The Aims and Scope of *Food Chemistry* are assessed and modified on an annual basis to reflect developments in the field. This means that research topics that have been deemed in scope previously may now fall outside of the scope of the journal as our scientific and technical understanding of the fields evolve and topics become less novel, original or relevant to *Food Chemistry*.

*Food Chemistry* publishes original research papers dealing with the advancement of the **chemistry** and **biochemistry** of **foods** or the analytical methods/approach used. All papers should focus on the novelty of the research carried out.

Topics include:

- Chemistry relating to major and minor **components of food**, their nutritional, physiological, sensory, flavour and microbiological aspects;

- **Bioactive constituents** of foods, including antioxidants, phytochemicals, and botanicals. Data must accompany sufficient discussion to demonstrate their relevance to food and/or food chemistry;

- Chemical and biochemical composition and structure changes in molecules induced by processing, distribution and domestic conditions;

- **Effects of processing** on the composition, quality and safety of foods, other bio-based materials, by-products, and processing wastes;

- Chemistry of **food additives, contaminants**, and other agro-chemicals, together with their metabolism, toxicology and food fate.

Analytical papers related to the microbiological, sensory, nutritional, physiological, authenticity and origin aspects of food. Papers should be primarily concerned with new or novel methods (especially instrumental or rapid) provided adequate validation is described including sufficient data from real samples to demonstrate robustness. Papers dealing with significant improvements to existing
methods, or data from application of existing methods to new foods, or commodities produced in unreported geographical areas, will also be considered.

For Analytical Papers, especially those dedicated to the development and validation of methods, authors are encouraged to follow internationally recognized guidelines, such as EURACHEM - for chemical compounds (https://www.eurachem.org/index.php/publications/guides/mv) or FDA - for microbiological data (https://www.fda.gov/downloads/ScienceResearch/FieldScience/UCM298730.pdf) and proper statistical methods should be applied. Special attention should be given to linearity, selectivity, determination of LOD/LOQ, repeatability and reproducibility of the analysis. Authors should also pay attention to trueness and, when possible (quantitative methods), determine the uncertainty of measurement. Overall, real samples should be analyzed by the state-of-the-art and the newly developed method for validation purposes.

- Methods for the determination of both major and minor components of food especially nutrients and non-nutrient bioactive compounds (with putative health benefits) will be considered.

- Results of method inter-comparison studies and development of food reference materials for use in the assay of food components;

- Methods concerned with the chemical forms in food, nutrient bioavailability and nutritional status;

- General authentication and origin [e.g. Country of Origin Labelling (COOL), Protected Designation of Origin (PDO), Protected Geographical Indication (PGI), Certificate of Specific Character (CSC)] determination of foods (both geographical and production including commodity substitution, and verification of organic, biological and ecological labelling) USING CHEMICAL MARKERS, providing sufficient data from authentic samples should be included to ensure that interpretations are meaningful.

Food Chemistry will not consider papers that focus on purely clinical or engineering aspects without any contribution to chemistry; pharmaceutical or non-food herbal remedies; traditional or folk medicines; or survey/surveillance data.

Papers on therapeutic application of food compounds/isolates for treatment, cure or prevention of human diseases will not be considered for inclusion in Food Chemistry.

AUDIENCE

Food technologists, scientists and chemists

IMPACT FACTOR

2018: 5.399 © Clarivate Analytics Journal Citation Reports 2019
ABSTRACTING AND INDEXING

Global Health
Publications in Food Microbiology
Current Contents
Science Citation Index
Web of Science
Embase
Chemical Abstracts
Nutrition Abstracts
EMBiology
CAB International
Chemical Engineering Biotechnology Abstracts
Sociedad Iberoamericana de Información Científica (SIIC) Data Bases
Scopus
BIOSIS Citation Index
FSTA (Food Science and Technology Abstracts)

EDITORIAL BOARD

Editor-in-Chief
Paul Finglas, Quadram Institute Bioscience, NR4 7UA, Norwich, United Kingdom

Editor-in-Chief Emeritus
Gordon Birch, University of Reading Department of Food and Nutritional Sciences, PO Box 217 Whiteknights, RG6 6AF, Reading, United Kingdom

Editorial Office
Mélanie Lowie, EuroFIR AISBL, Brussels, Belgium

Editors
Cesarettin Alasalvar, TUBİTAK Marmara Research Centre Food Institute, Gebze, Turkey
Siân Astley, EuroFIR AISBL, Brussels, Belgium
Dimitris Charalampopoulos, University of Reading, Reading, United Kingdom
J. Stephen Elmore, University of Reading, Reading, United Kingdom
Daniel Granato, Natural Resources Institute Finland, HELSINKI, Finland
Francisco Hidalgo, Fat Institute, Sevilla, Spain
Kazuo Miyashita, Hokkaido University, Faculty of Fisheries Sciences, Department Bioresources Chemistry, Hakodate, Japan
John Van Camp, Ghent University, Gent, Belgium

Associate Editors
Carlos Álvarez García, Teagasc Food Research Centre Ashtown, Dublin, Ireland
Edna Regina Amante, Federal University of Santa Catarina, Florianópolis, Brazil
Nandika Priyantha Bandara, Dalhousie University Department of Plant Food and Environmental Sciences, Truro, Nova Scotia, Canada
Krzysztof Buksa, University of Agriculture in Krakow, Faculty of Food Technology, Department of Carbohydrates Technology, Kraków, Poland
Beatriz Cabanillas, 12th of October Hospital Research Institute, Madrid, Spain
Isabel Castanheira, National Institute of Health Doctor Ricardo Jorge, Lisboa, Portugal
Vural Gökmen, Hacettepe University, Ankara, Turkey
Melvin Holmes, University of Leeds School of Food Science and Nutrition, Leeds, United Kingdom
Amin Ismail, Universiti Putra Malaysia Faculty of Medicine and Health Sciences, Serdang, Malaysia
Jette Jakobsen, National Food Institute, Søborg, Denmark
Paul Kilmartin, The University of Auckland, Auckland, New Zealand
Ron Pegg, The University of Georgia, Athens, Georgia, United States
Dongxiao Sun-Waterhouse, South China University of Technology, Guangzhou, China
Peng Zhou, Jiangnan University, Wuxi, Jiangsu, China

Editorial Board Members
Rotimi Aluko, University of Manitoba, Winnipeg, Manitoba, Canada
Ryszard Amarowicz, Institute of Animal Reproduction and Food Research PAS, Olsztyn, Poland
Paula Andrade, University of Porto, Porto, Portugal
Skelte Anema, Fonterra Research and Development Centre, Palmerston North, New Zealand
Marco Arlorio, University of Eastern Piedmont, Vercelli, Italy
Joseph H. Banoub, Fisheries and Oceans Canada Newfoundland and Labrador Region, St John’s, Newfoundland and Labrador, Canada
Yongping Bao, University of East Anglia Norwich Medical School, Norwich, United Kingdom
João Barreira, Polytechnic Institute of Bragança, Bragança, Portugal
Maurizio Battino, Polytechnic University of Marche Department of Specialised Clinical Sciences and Odontostomatolog, Ancona, Italy
John Beaulieu, USDA-ARS Southern Regional Research Center, New Orleans, Louisiana, United States
R.G. Berger, Leibniz University Hanover, Hannover, Germany
Trust Beta, University of Manitoba, Winnipeg, Manitoba, Canada
Miroketti, University of Alberta, Edmonton, Alberta, Canada
Alessandra Miranda Cabral, Federal University of Rio Grande do Norte, Natal, Brazil
Yeming Chen, Jiangnan University, Wuxi, Jiangsu, China
Lisa Dean, North Carolina State University, Raleigh, North Carolina, United States
Bruno Fedrizzi, The University of Auckland, Auckland, New Zealand
Mike Gidley, Queensland Alliance for Agriculture and Food Innovation Centre for Nutrition and Food Sciences, St Lucia, Queensland, Australia
Owen Jones, Purdue University, West Lafayette, Indiana, United States
Mun Yhung Jung, Woosuk University Department of Food Science and Biotechnology, Wanju-gun, Korea, Republic of
Jungmin Lee, USDA-ARS Horticultural Crops Research Unit, Parma, Idaho, United States
Mei Lu, University of Nebraska-Lincoln, Lincoln, Nebraska, United States
Ashkan Madadiou, National Research Institute for Agriculture Food and Environment Bretagne-Normandie Center, Rennes, France
Mohamed Mathlouthi, Reims Champagne-Ardenne University, Reims, France
S. Porretta, Experimental Station for Food Preservation Industry, Parma, Italy
Predrag Putnik, University of Zagreb Department of Food Engineering, Zagreb, Croatia
Patrizia Rubiolo, University of Turin, Torino, Italy
Fereidoon Shahidi, Memorial University of Newfoundland Department of Biochemistry, St John's, Newfoundland and Labrador, Canada
Jae-Han Shim, Chonnam National University, Gwangju, Korea, Republic of
Fidel Toldrá, Instituto de Agroquimica y Tecnologia de Alimentos (CSIC), Valencia, Spain
Rong Tsao, Agriculture and Agri-Food Canada Guelph Research and Development Centre, Guelph, Ontario, Canada
Jianbo Xiao, University of Macau, Taipa, Macao
Varoujan Yaylayan, McGill University Department of Food Science and Agricultural Chemistry, Sainte-Anne-de-Bellevue, Quebec, Canada
Lucy Yu, University of Maryland at College Park, College Park, Maryland, United States
Reinhard Zeleny, European Commission Joint Research Centre, Brussels, Belgium
Ying Joy Zhong, DuPont Company, Olathe, Kansas, United States
Dayong Zhou, Dalian Polytechnic University, Dalian, China
**INTRODUCTION**

FOCH has an open access mirror journal, FOCH: X. The Aims and Scope of Food Chemistry are assessed and modified on an annual basis to reflect developments in the field. This means that research topics which may have been deemed in scope in previous years may now fall outside of the scope of the journal as our scientific and technical understanding of the field evolves and topics become less novel, original or relevant to Food Chemistry.

**Ten essential rules to ensure your manuscript is handled promptly**

The manuscript fits the Aims and Scope of the journal (http://www.journals.elsevier.com/food-chemistry) Manuscript is in accordance with ARTICLE TYPE - GUIDELINES and includes a hypothesis statement (https://www.elsevier.com/journals/food-chemistry/0308-8146/guide-for-authors#14000)

The text is written in good English. Authors who feel their manuscript might require editing to meet correct scientific English requirements may wish to use an English Language Editing service such as the one available from Elsevier's WebShop (http://webshop.elsevier.com/languageditorial/).

The manuscript text is divided into numbered sections; line and page numbers are added and text is double-spaced. An ethical statement is required for experiments involving humans or animals. Conflict-of-interest statement is included at the end of the manuscript. The number of figures and tables combined does not exceed a total of six; additional tables and figures can be submitted as supplementary material. All relevant sources (i.e. peer-reviewed articles, websites, books, etc.) should be included in the Reference list. A cover letter is prepared, introducing your article and explaining the novelty of the research. Highlights identify important outcomes of your work and stand alone (i.e. do not require someone to read the article to understand what they mean). These are presented in 3-5 points, 85 characters each.

**Submission checklist**

This checklist allows authors to ensure that the manuscript meets the Food Chemistry requirements before submission. Checklist can also be downloaded here here.

1) Study contents:

The Authors should ensure that The manuscript fits within Aims & Scope of Food Chemistry. Please note that the Aims and Scope are regularly updated. The research is novel and has not been published previously - see "Responsible research publication: international standards for authors" from COPE for more information (http://publicationethics.org/files/International%20standards_authors_for%20website_11_Nov_2011_0.pdf). Ethical consent has been obtained in case of work on animals and/or humans.

2) Manuscript preparation:

The Authors should ensure that The formatting of the manuscript follows the requirements of the Guide for Authors. The language follows the requirements of the Guide for Authors. The number of words and of figures/tables is within limits: • Research article: 7500 words, 6 tables and figures combined. • Review article: 10 000 words, 6 tables and figures combined. • Short communication: 3000 words, 6 tables and figures combined. More tables and figures? Submit as supplementary material. The title page contains title, author names, affiliations and corresponding author telephone. Email addresses are required for ALL authors. Authors must provide and use a unique, individual e-mail address and not one that is shared with another author registered in the submission system, or a department. Author names - please ensure that names are listed in the first name/FAMILY NAME (e.g. Marie CURIE) - this will ensure they are listed correctly in indexing services. The highlights are provided (3-5 bullet points, max 85 characters each including spaces). The manuscript contains a conflict of interest statement (before references). Continuous line numbering is provided throughout the manuscript (including captions and references); page numbering is provided. All sources (references) are provided in alphabetical order. Figures and tables (6 combined) include clear legends. The manuscript contains appropriate ethical approval and informed consent (if applicable, include statement). Food Chemistry now requires the inclusion of a hypothesis statement in the Introduction, and response...
in the Discussion. Please ensure this is included. **3) Before submission: Manuscript** file is provided as a Microsoft Word file. A **cover letter** is included. Three or more suggested **reviewers** are provided (including affiliation and professional email address), at **least two of which are from a different country than the Authors and none from the same institution. Keywords** are provided.

Now you are ready to submit at [http://ees.elsevier.com/foodchem](http://ees.elsevier.com/foodchem)

**Types of paper**

Original research papers; review articles; rapid communications; short communications; letters to the Editor.

1. **Research papers** - original full-length research papers that have not been published previously, except in a preliminary form, and should not exceed 7,500 words from introduction to conclusion (not including references) (including no more than six tables and figures combined - additional tables and figures can be submitted as supplementary material). Research papers should not contain more than 40 references.

2. **Review articles** - will be accepted in areas of topical interest, will normally focus on literature published over the previous five years, and should not exceed 10,000 words from introduction to conclusion (not including references) (including allowance for no more than six tables and figures combined). Review articles should not contain more than 120 references. If it is felt absolutely necessary to exceed these numbers (tables, figures, references), please contact the editorial office for advice before submission.

3. **Short communications** - Short communications of up to 3000 words from introduction to conclusion (not including references), describing work that may be of a preliminary nature but merits publication. These papers should not contain more than 40 references.

4. **Viewpoints** - Authors may submit viewpoints of no more than 1200 words on any subject covered by the Aims and Scope.

5. **Letters to the Editor** - Letters are published from time to time on matters of topical interest.

**BEFORE YOU BEGIN**

**Ethics in publishing**

Please see our information pages on Ethics in publishing and Ethical guidelines for journal publication. Another useful source of guidance is "Responsible research publication: international standards for authors" from COPE ([http://publicationethics.org/files/International%20standards_authors_for%20website_11_Nov_2011_0.pdf](http://publicationethics.org/files/International%20standards_authors_for%20website_11_Nov_2011_0.pdf)).

Guidelines in the US and Canada, Europe and Australia specifically state that hypothermia (use of ice slurries) is not an acceptable method for killing fish in the research environment.

**Declaration of interest**

All authors must disclose any financial and personal relationships with other people or organizations that could inappropriately influence (bias) their work. Examples of potential conflicts of interest include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding. Authors should complete the declaration of interest statement using this template and upload to the submission system at the Attach/Upload Files step. If there are no interests to declare, please choose: 'Declarations of interest: none' in the template. This statement will be published within the article if accepted. [More information](#).

**Submission declaration and verification**

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

**Preprints**

Please note that preprints can be shared anywhere at any time, in line with Elsevier's sharing policy. Sharing your preprints e.g. on a preprint server will not count as prior publication (see 'Multiple, redundant or concurrent publication' for more information).
Use of inclusive language
Inclusive language acknowledges diversity, conveys respect to all people, is sensitive to differences, and promotes equal opportunities. Articles should make no assumptions about the beliefs or commitments of any reader, should contain nothing which might imply that one individual is superior to another on the grounds of race, sex, culture or any other characteristic, and should use inclusive language throughout. Authors should ensure that writing is free from bias, for instance by using 'he or she', 'his/her' instead of 'he' or 'his', and by making use of job titles that are free of stereotyping (e.g. 'chairperson' instead of 'chairman' and 'flight attendant' instead of 'stewardess').

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

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

If all 3 of these conditions are not met, a person does not qualify as an author, and any contribution made by them should be mentioned in the Acknowledgements section of the manuscript.

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.

It is the policy of Food Chemistry that no additions, deletions or changes to authorship of a paper will be permitted after the article is accepted.

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.

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.

Subscription or open access: your choice
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 access programs.
- No open access publication fee payable by authors.

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

Regardless of how you choose to publish your article (subscription or open access), the journal will apply the same peer review criteria and acceptance standards.

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

Open access
Authors wishing to publish open access can choose to publish open access in Food Chemistry: X [https://www.journals.elsevier.com/food-chemistry-x], the open access mirror journal of Food Chemistry. One, unified editorial team manages the peer-review for both titles using the same submission system. The difference between the journals is the access model under which the journals will publish your work and the indexation status. Food Chemistry: X will be indexed in Scopus if the parent is also indexed there; if the parent is indexed in MEDLINE, then Food Chemistry: X will also be eligible for fast inclusion in PubMed Central. However, please note that Food Chemistry: X will not have a CiteScore or Impact Factor initially. Applications for inclusion in Science Citation Index / Social Sciences Citation Index and any other relevant citation indexing databases will be made as soon as possible.

The authors choice of publishing model will determine in which journal, Food Chemistry or Food Chemistry: X, the accepted manuscript will be published. The choice of publishing model will be blinded to referees, ensuring the editorial process is identical.

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

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

Submission
Our online submission system guides you stepwise through the process of entering your article details and uploading your files. The system converts your article files to a single PDF file used in the peer-review process. Editable files (e.g., Word, LaTeX) are required to typeset your article for final publication. All correspondence, including notification of the Editor’s decision and requests for revision, is sent by e-mail.

Authors must provide and use an email address unique to themselves and not shared with another author registered in the submission system, or a department.

Referees
Authors are required to submit with their articles, the names, complete affiliations (spelled out), country and contact details (including current and valid (preferably business) e-mail address) of five potential reviewers. Email addresses and reviewer names will be checked for validity. **Your potential reviewers should not be from your institute, and at least two should be from countries other than those of the authors.** Authors should not suggest reviewers with whom they have collaborated within the past two years. Your submission will be rejected if these are not supplied.
Names provided may be used for other submissions on the same topic. Reviewers must have specific expertise on the subject of your article and/or the techniques employed in your study. Briefly state the appropriate expertise of each reviewer (not simply "has an interest in this topic").

**Review Policy**

A peer review system involving at least two reviewers is used to ensure high quality of manuscripts accepted for publication. The Managing Editor and Editors have the right to decline formal review of a manuscript when it is deemed that the manuscript is on a topic outside the scope of the Journal; makes no contribution to the advancement of the chemistry of foods is lacking technical or scientific merit; is focused on foods or processes that are of narrow regional scope and significance; is fragmentary and providing marginally incremental results; reports only routine work (lacks novelty) or is poorly written.

**PREPARATION**

**Peer review**

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

**Use of wordprocessing software**

**General:** Manuscripts must be typewritten, double-spaced with 2 cm margins. Each page must be numbered, and lines must be consecutively numbered from the start to the end of the manuscript. Good quality printouts with a font size of 12 or 10 pt are required. The corresponding author should be identified (include a valid E-mail address). Full postal and email addresses must be given for all co-authors. Authors should consult a recent issue of the journal for style if possible. The Editors reserve the right to adjust style to certain standards of uniformity.

**Article structure**

Follow this order when typing manuscripts: Title, Authors, Affiliations, Abstract, Keywords, Main text (Introduction, Material and Methods, Results, Conclusion), Acknowledgements, Appendix, References, Figure Captions. The corresponding author should be identified with an asterisk and footnote. All other footnotes (except for table footnotes) should be identified with superscript Arabic numbers. The title of the paper should unambiguously reflect its contents.

**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 full given name(s) and family name(s) of each author and that all names are accurately spelled. Please ensure that names are listed in the order first name/FAMILY NAME (e.g. Marie CURIE) - this will ensure they are listed correctly in indexing services. Present the authors’ affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lower-case superscript letter immediately after the author’s name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name and, if available, the e-mail address of each author.
- **Corresponding author.** Clearly indicate the one author who will handle correspondence at all stages of refereeing and publication, also post-publication. Ensure that the e-mail address is given and that contact details are kept up to date by the corresponding author.
- **Present/permanent address.** If an author has moved since the work described in the article was done, or was visiting at the time, a 'Present address' (or 'Permanent address') may be indicated as a footnote to that author's name. The address at which the author actually did the work must be retained as the main, affiliation address. Superscript Arabic numerals are used for such footnotes.

**Highlights**

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

Highlights should be submitted in a separate editable file in the online submission system. Please use 'Highlights' in the file name and include 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point).
Abstract
A concise and factual abstract is required. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

The abstract should not exceed 150 words.

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.

Hypotheses
Nearly all scientific papers benefit from inclusion of a statement of hypothesis. Such statements should be clear, concise, and declarative. The statement should describe the one or more key hypotheses that the work described in the manuscript was intended to confirm or refute. Inclusion of a hypothesis statement makes it simple to contrast the hypothesis with the most relevant previous literature and point out what the authors feel is distinct about the current hypothesis (novelty). It also permits the authors to describe why they feel it would be important to prove the hypothesis correct (significance). The hypothesis shall be stated in the introductory section, and the conclusion section shall include your conclusion about whether the hypothesis was confirmed or refuted, as well as describing any new hypotheses generated by the work described. Here is an example of a famous, excellent hypothesis statement; declarative, concise, clear, and testable: "Equal volumes of gases, at the same temperature and pressure, contain equal numbers of molecules." Lorenzo Romano Amedeo Carlo Avogadro di Quareqa e di Carreto (Avogadro), 1811

Chemical compounds
You can enrich your article by providing a list of chemical compounds studied in the article. The list of compounds will be used to extract relevant information from the NCBI PubChem Compound database and display it next to the online version of the article on ScienceDirect. You can include up to 10 names of chemical compounds in the article. For each compound, please provide the PubChem CID of the most relevant record as in the following example: Glutamic acid (PubChem CID: 611). Please position the list of compounds immediately below the 'Keywords' section. It is strongly recommended to follow the exact text formatting as in the example below:

Chemical compounds studied in this article
Ethylene glycol (PubChem CID: 174); Plitidepsin (PubChem CID: 44152164); Benzalkonium chloride (PubChem CID: 15865)

More information.

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

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

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

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

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Units
Follow internationally accepted rules and conventions: use the international system of units (SI). If other units are mentioned, please give their equivalent in SI. Temperatures should be given in degrees Celsius. The unit 'billion' is ambiguous and should not be used.
Abbreviations for units should follow the suggestions of the British Standards publication BS 1991. The full stop should not be included in abbreviations, e.g. m (not m.), ppm (not p.p.m.); % and '/' should be used in preference to 'per cent' and 'per'. Where abbreviations are likely to cause ambiguity or might not be understood easily by an international readership, units should be spelled out in full.

Statistics

Appropriate application of statistical analysis should be applied throughout the article.

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.
- Size the illustrations close to the desired dimensions of the published version.
A detailed guide on electronic artwork is available.

You are urged to visit this site; some excerpts from the detailed information are given here.

Figures

Photographs, charts and diagrams are all to be referred to as "Figure(s)" and should be numbered consecutively in the order to which they are referred. All illustrations should be clearly marked with the figure number and the first author's name.

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. 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.

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.

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.

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/food-chemistry

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

All publications cited in the text should be presented in a list of references following the text of the manuscript. See Types of Paper for reference number limits. In the text refer to the author's name (without initials) and year of publication (e.g. "Steventon, Donald and Gladden (1994) studied the effects...") or "...similar to values reported by others (Anderson, Douglas, Morrison & Weiping,
For 2-6 authors all authors are to be listed at first citation. At subsequent citations use first author et al.. When there are more than 6 authors, first author et al. should be used throughout the text. The list of references should be arranged alphabetically by authors’ names and should be as full as possible, listing all authors, the full title of articles and journals, publisher and year. The manuscript should be carefully checked to ensure that the spelling of authors' names and dates are exactly the same in the text as in the reference list.

Reference style

Text: Citations in the text should follow the referencing style used by the American Psychological Association. You are referred to the Publication Manual of the American Psychological Association, Sixth Edition, ISBN 978-1-4338-0561-5, copies of which may be ordered online or APA Order Dept., P.O.B. 2710, Hyattsville, MD 20784, USA or APA, 3 Henrietta Street, London, WC3E 8LU, UK.

List: references should be arranged first alphabetically and then further sorted chronologically if necessary. More than one reference from the same author(s) in the same year must be identified by the letters 'a', 'b', 'c', etc., placed after the year of publication.

Examples:

Reference to a journal publication:

Reference to a journal publication with an article number:

Reference to a book:

Reference to a chapter in an edited book:

Reference to a website:

Reference to a dataset:

Reference to a conference paper or poster presentation:

Data visualization

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

Research data

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

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

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

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

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

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

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

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

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

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

After submission
Click HERE to see what may happen to your manuscript once it is submitted.

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. It is important to ensure that all corrections are sent back to us in one communication. Check carefully before replying. This is your last opportunity to correct errors. Proofreading is solely your responsibility.

**Offprints**
The corresponding author will, at no cost, receive a customized [Share Link](https://www.elsevier.com) providing 50 days free access to the final published version of the article on [ScienceDirect](https://www.sciencedirect.com). The Share Link can be used for sharing the article via any communication channel, including email and social media. For an extra charge, paper offprints can be ordered via the offprint order form which is sent once the article is accepted for publication. Both corresponding and co-authors may order offprints at any time via Elsevier's [Author Services](https://www.elsevier.com). 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](https://www.elsevier.com) 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.