

Instructions for authors

Last update September 2017

Authors are requested to follow these instructions carefully. Manuscripts not prepared accordingly will be returned to authors and this will inevitably lead to a delay in the editorial processing of the manuscript.

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1. Terms of publication

1.1. Aims and scope

Engineering in Life Sciences integrates innovations in technology and basic biology. The journal focuses on bioprocess and biochemical engineering, as well as applied biotechnology. Limited resources and energy shortage, as well as global climate change, require fundamental innovations to effectively produce chemicals, fuels and materials from renewable resources. Furthermore, the increasing healthcare costs and the huge potential of personalized medicine call for new concepts and tools in biomanufacturing of pharmaceuticals.

Engineering in Life Sciences addresses these needs and provides an interdisciplinary forum to support innovation in

- Biotechnological production systems
- Bioprocess engineering (upstream and downstream processing)
- Applications in the production of chemicals, food and pharmaceuticals, biofuels as well as biomedicine.

Biotechnological production systems include any type of microbes, bacteria as well as fungi, plant cell and plant organ cultures, algae, mammalian cells and stem cells. Of particular interest are hosts optimized by metabolic engineering and synthetic biology, as well as other innovative production concepts, such as cell-free systems, enzyme cascades, integrated chemo-bioproduction processes, and electro-biotechnological systems.

Bioprocess engineering involves bioreactor design and operation, modelling and control, high-throughput technology and miniaturized systems; bioprocess monitoring and analysis including bioanalytics; scale-up/down; and downstream processing. Engineering analysis of organisms is also of interest, including systems biology approaches and single-cell dynamics.

Applications with a strong focus on industrial biotechnology are key to the journal's scope. These include bioenergy, e.g. biofuels and biogas, biocatalysis, biomaterials and bioplastics, as well as synthesis of high and low-value chemicals. In addition, the journal focusses on biopharmaceutical production, engineering concepts for biosensors and bio-diagnostics, micro- and nanotechnology, and innovative concepts for environmental and medical biotechnology.

Out of scope

Engineering in Life Sciences will not consider submissions consisting of marginal advancements and narrow application potential, such as medium and fermentation optimization without technical novelty, biosorption and biodegradation studies without presentation of an innovative method or insights into the mechanism, and cloning and characterization studies without functional data or demonstrated applications.

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1.2. Publication Ethics

1.2.1. Ethical misconduct

This journal endorses the COPE (Committee on Publication Ethics) guidelines and will pursue cases of suspected research and publication misconduct. In such cases, the journal will follow the processes set out by COPE. For more information about COPE please visit the COPE website at <http://www.publicationethics.org>. All instances of publishing misconduct, including, but not limited to, plagiarism, data fabrication, image/data manipulation to falsify/ enhance results, *etc.* will result in rejection/retraction of the manuscript.

1.2.2. Permission to reproduce figures or data; citing of unpublished data

It is the authors' responsibility to obtain permissions for reproduction of figures, tables, or text from published works. In many cases, the publisher of a journal or book is the copyright owner from whom the written permission must be obtained. Permission from authors is also encouraged as a professional courtesy.

Reference to any unpublished data of others also needs permission statements. It is the author's responsibility to obtain and keep a copy of these permission statements.

1.2.3. Plagiarism

All manuscripts accepted for publication will be cross-checked with existing publications for plagiarism.

For sections such as the "Materials and methods", whereby it may be difficult to rephrase particular protocols, authors are encouraged to refer to the original paper and only include modifications that were made in the current manuscript.

2. Manuscript preparation

2.1. Language assistance

Engineering in Life Sciences publishes articles in English. American spelling is preferred. Manuscripts must be grammatically and linguistically correct, and authors less familiar with English usage are advised to seek the help of English-speaking colleagues. Authors may also choose to have their manuscript professionally edited before submission or during the review process.

For language editing, we recommend the Wiley Editing Service: <http://wileyeditingservices.com/en>.

2.2. Types of contributions

Four categories of **scientific contributions** are accepted for publication:

- 1) Research Articles
- 2) Reviews (Mini-Reviews)
- 3) Short Communications
- 4) Technical Reports

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Article templates

To prepare your article you may also use the following templates. These file will help you to comply with all requirements. Templates are available for Research Articles and Reviews.

Research Article: [http://onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1618-2863/homepage/ELSC_Template_Research_Article.docx](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1618-2863/homepage/ELSC_Template_Research_Article.docx)

Review: [http://onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1618-2863/homepage/ELSC_Template_Review_2014.docx](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1618-2863/homepage/ELSC_Template_Review_2014.docx)

Given word limits include references, legends and tables.

Research Articles (6500 words, up to 7 display elements - figures/tables) describing complete investigations. Longer manuscripts will be considered but only if the increased length is a reflection of the amount of data presented and not a reflection of the inclusion of unnecessary information. Manuscripts may not have been published previously, except in the form of a preliminary communication. Research articles should be divided into sections as specified in Section **2.4.4. Division into sections**. The authors need to include a statement of “Practical application” that highlights the uses – either actual or potential – of the research presented (maximum 150 words). To include the “Practical application” in the main file, it has to appear in the manuscript text.

Reviews (8000 words – up to 5 display elements - figures/tables - Mini-review: 4000 words – up to 2 display elements - figures/tables) will usually be invited by the Editors. Authors wishing to submit a review article should send a brief outline of its contents to the Editor-in-Chief before the manuscript is drafted. The articles should be divided into sections that are appropriate to the topic. A “Practical application” section is not required.

Short Communications (3000 words, 3 display elements - figures/tables) describing results that are brief, timely and/or of such importance that rapid publication is warranted. These manuscripts should bear the words “Short Communication” immediately above the title on the first page. They should **not** be subdivided into titled sections but be written in a continuous style. The authors need to include a statement of “Practical application” that highlights the uses – either actual or potential – of the research presented (maximum 150 words). To include the “Practical application” in the main file, it has to appear in the manuscript text.

Technical Reports (4000 words, 3 display elements - figures/tables) describe the development of a novel method or an improvement or noteworthy modification of an already existing technique or platform used in biotechnology. These manuscripts should bear the words “Technical Report” immediately above the title on the first page. Technical reports should not exceed 4000 words (including references as well as figure and table legends) and contain no more than three display elements (figures and tables). To include the “Practical application” in the main file, it has to appear in the manuscript text.

2.3. Cover letter

The manuscript should be accompanied by a cover letter that includes the following statements:

- 1) Why the paper is suitable for publication in the *Engineering in Life Sciences*?
- 2) All authors concur with the submission and have seen a draft copy of the manuscript and agree with its publication.
- 3) The work has not been published elsewhere, either completely, in part, or in another form.

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- 4) The manuscript has not been submitted to another journal and will not be published elsewhere within one year after its publication in this journal. Publication in any reasonably retrievable source constitutes prior publication. Meeting abstracts or preprints do not constitute prior publication.
- 5) Conflict of Interest statement: Authors are responsible for disclosing all financial and personal relationships between themselves and others that might bias their work. To prevent ambiguity, authors must state explicitly whether potential conflicts do or do not exist. (see Section **2.4.11. Conflict of interest statement** for more details). This statement will not influence the decision.
- 6) The manuscript does/does not contain experiments using animals. The permission of the national or local authorities (giving the permission or the accreditation no. of the laboratory and of the investigator) should be stated if animal experiments are included. If no such rules or permissions have been implicated in the particular country, this must be stated.
- 7) The manuscript does/does not contain human studies. If such studies are included, it should be stated that local Ethical Committee approval was received for the studies and that the informed consent of all participating subjects was obtained. Permission statements relating to points 4 and 5 should also be included in the text of the manuscript.

Permission statements relating to points 5), 6) and 7) should also be included in the text of the manuscript.

2.4. Format and style of manuscripts

2.4.1. Title page

The first page of all manuscripts should contain only the following:

- 1) *Title of the paper* - containing only the most important keywords pertaining to the subject matter. Only standard abbreviations should be used in the title.
- 2) *Full names* (including first name) of the authors and the name of their institute(s). If the publication originates from several institutes the affiliations of all authors should be clearly stated by using superscript numbers after the name and before the institute.
- 3) *Name, title and full postal address* of the author to whom all correspondence (including galley proofs) is to be sent. This should include fax and telephone numbers, and e-mail address.
- 4) *Keywords* will influence the discoverability of your paper when users perform a search. You may select up to 5 keywords.
- 5) A list of abbreviations used in the paper excluding standard abbreviations (see list in **Appendix A: Standard abbreviations**). Bear in mind that abbreviations are hindrances to a reader working in a field other than that of the author. Therefore, their use should be restricted to a minimum. Abbreviations should be introduced only when repeatedly used. Abbreviations used only in a table or a figure may be defined in the legend. Standard abbreviations may be used in the title and keywords. You may also provide a **nomenclature**, with a list of all symbols used in the formulas (see below).

2.4.2. Practical application

When submitting your manuscript the submission system will ask you to give a “Practical application” of your work. This text should highlight the uses – either actual or potential – of the research you are presenting. Providing this information will ensure the content is widely accessible by both academic

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and corporate audiences. The limit for this section is 150 words. To include the “Practical application” in the final article, it has to appear in the manuscript text, on the second page, before the abstract.

2.4.3. Abstract

The third page of the manuscript should contain the “Abstract” only. This must be self-explanatory and intelligible without reference to the text. It should not exceed 200 words. Only standard abbreviations are allowed. Non-standard abbreviations must be written in full when first used. The “Abstract” should not contain any references.

2.4.4. Division into sections

Research Articles should be divided into the following sections:

- 1 Introduction
- 2 Materials and methods
- 3 Results
- 4 Discussion
- 5 References

Sections 3 and 4 may be combined to a section “3 Results and Discussion” and should then be followed by a short section entitled “4 Concluding remarks”.

Subdivisions of sections should be indicated by subheadings.

2.4.5. Introduction

The “Introduction” section should contain a description of the problem under investigation and a brief survey of the existing literature on the subject. The study rationale/hypothesis should also be clearly described.

2.4.6. Materials and methods

The “Materials and methods” section should describe all materials and methods used in the study in sufficient detail so that an independent, trained reader may repeat the studies. Any materials and experiments that are used only in the “Supporting information”, do not need to be described in the main text and instead should be included in the “Supporting information”. Authors are encouraged to refer to previously published descriptions of methods and provide only a brief summary of the method. Any modifications to published methods should be described in detail. Sources (name and location) of reagents and equipment should be provided.

2.4.7. Results

The “Results” section describes the main experimental finding of the study. Sub-sections should be provided to reflect the key messages of the study. Full statistical analysis should be performed. The name of each test used and its outcome should be detailed, as should the number of samples, replicates and data presentation (SD vs SEM).

2.4.8. Discussion

The “Discussion” section describes the findings in light of current knowledge. It should enrich, but not repeat, the “Introduction” and the “Results” sections.

2.4.9. Concluding remarks

The “Concluding remarks” section is only applicable to manuscripts, in which the results and discussion sections are combined. Concluding remarks should provide the take-home message in a short and succinct manner.

2.4.10. Acknowledgements

Acknowledgements should be provided on a separate page at the end of the text (before the references). Do not forget to acknowledge your funding sources.

2.4.11. Conflict of interest statement

Engineering in Life Sciences requires that all authors disclose any potential sources of conflict of interest. Any interest or relationship, financial or otherwise that might be perceived as influencing an author’s objectivity is considered a potential source of conflict of interest. These must be disclosed when directly relevant or indirectly related to the work that the authors describe in their manuscript. Potential sources of conflict of interest include but are not limited to patent or stock ownership, membership of a company board of directors, membership of an advisory board or committee for a company, and consultancy for or receipt of speaker’s fees from a company. The existence of a conflict of interest does not preclude publication in this journal.

It is the responsibility of the corresponding author to review this policy with all authors and to collectively list in the cover letter, in the manuscript (under the acknowledgment section), and in the online submission system ALL pertinent commercial and other relationships.

Either

The authors have declared no conflict of interest.

Or

Conflict of interest statement: Nature of the conflict of interest, e.g. "Author X is a paid consultant for company Y."

This statement will not influence the peer review and the decision on the manuscript.

2.4.12. Nomenclature

If your article contains a lot of formulas and symbols, you may include a “Nomenclature” section that lists all symbols. This should be a table containing the following information: symbol, unit, explanation.

2.4.13. References

References, including those in tables and figure legends, should be numbered sequentially in the order in which they appear in the text. The numbers should be set in square brackets in the text *i.e.* [2, 18]. References are to be collected in numerical order at the end of the manuscript under the

heading “References”, they should also be typed with double spacing throughout. Titles of journals should be abbreviated according to the practice of PubMed. The abbreviated journal title and the volume number should be in italics. Titles of books and patents should be in italics, journal titles not.

If necessary, cite *unpublished or personal work* in the text but do not include it in the reference list. The DOI for the reference should be included at the end of the reference, if no print reference is available. *Abstracts and posters* in meeting books must not be cited unless they are generally accessible. Please note that *website* addresses must not be included as a reference but should be inserted in the text directly after the data to which they refer.

Please note the following examples:

Journals

[1] Stech, M., Hust, M., Schulze, C., Dübel, S. and Kubick, S., Cell-free eukaryotic systems for the production, engineering, and modification of scFv antibody fragments. *Eng. Life Sci.* 2014, 14, 387–398.

[2] Schirmaier, C., Jossen, V., Kaiser, S. C., Jüngerkes, F. et al., Scale-up of adipose tissue-derived mesenchymal stem cell production in stirred single-use bioreactors under low-serum conditions. *Eng. Life Sci.* 2014, 14, 292–303.

Books

[3] Bisaria, V. S., Kondo, A. (Eds.), *Bioprocessing of renewable resources to commodity bioproducts*, Wiley-VCH, Weinheim 2014.

[4] Geis, A., Perspectives of genetic engineering of bacteria used in food fermentations, in: Heller, K. J. (Ed.), *Genetically Engineered Food – Methods and Detection*, Wiley-VCH Verlag, Weinheim 2003, pp. 100–118.

Patents

[5] Pandey, R., Ratnani, K., Ahmed, S., Williams, J., *Direct conversion of methane to hythane*. US Patent 5516967, 1996.

Note that

- Papers with multiple authors should be limited to listing the first four authors, followed by et al.
- Papers published online in advance of print should be cited with their DOI.
- Other serial publications should be cited in the same manner as journals.

Responsibility for the accuracy of bibliographic references rests entirely with the author.

2.4.14. Tables

Tables with suitable captions at the top and numbered with Arabic numerals should be collected at the end of the text on separate pages for different tables. Column headings should be kept as brief as possible and indicate units. Footnotes to tables should be indicated with a), b), c), etc. and typed on the same page as the table.

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2.4.15. Figures and legends

Figures should be numbered in the order of their appearance in the text with Arabic numerals. Each figure must have a separate legend, which should be self-explanatory and allow readers to understand the data presented without reference to the main text. The legends should not appear under the figures, but be gathered in a separate section (“Figure legends”) after the references and tables. The figures should be submitted separately and not included into the main document. Non-color as well as **color figures** are published free of charge.

2.4.16. Statistical analysis – standard requirements

Full statistical analysis of your data should be detailed in the manuscript, preferably in the figure legends to allow each figure to be easily understood without reference to the main text of the article. The name of each statistical test used and the results obtained (including a description of the comparisons made to obtain the p values, if not clearly indicated in the figures themselves) should be stated. The number of samples, experiments, replicates etc. should be detailed; data presentation (mean \pm SD or SEM etc.) should be noted. Authors are encouraged to analyze data across multiple experiments, if at all possible, and should note that analyzing replicates within a single experiment does not provide information regarding experimental reproducibility.

2.4.17. Structural formulae

Structural formulae should be drawn in the manuscript in the position where they belong. They must be numbered in consecutive order with the other figures.

2.4.18. Equations

Mathematical and chemical equations are to be written in the manuscript at the place in which they belong and should be marked by Arabic numerals in parentheses in the right margin in the order of their appearance.

2.4.19. Supporting information

“Supporting information” can be a useful way for an author to include important but ancillary information with the online version of an article. Examples of “Supporting information” include additional tables, data sets, figures, movie files, audio clips, 3D structures, and other related nonessential multimedia files. “Supporting information” should be cited within the article text, and a descriptive legend should be included. It is published as supplied by the author, and a proof is not made available prior to publication; for these reasons, authors should provide any “Supporting information” in the desired final format. Where possible, authors are encouraged to submit “Supporting information” as a single PDF file.

For further information on recommended file types and requirements for submission, please visit: <https://authorservices.wiley.com/author-resources/Journal-Authors/Prepare/supporting-information.html>.

2.5. Guidelines for figure preparation

For initial submission, it is not necessary to submit graphics with high resolution; however, if your manuscript is accepted, high resolution graphics will be required as detailed in this section. It would be the best to provide them upon revision. Each figure should be given in a separate file. Please prepare your figures according to the following guidelines:

- Crop, or scale, art to the size intended for publication; no enlargement or reduction should be necessary. If this is not possible. Figures should be submitted in a format which can be reduced to publication size i.e. a width of 55 – 85 mm or 120 – 175 mm.
- Figure panels should be indicated by capital letters (A, B, C etc.).
- As far as possible, all comparable labels should have the same size lettering, and the font size should be consistent throughout the figures. Use standard fonts such as Times, Times New Roman, Arial and Helvetica. Symbols and labels should be a height of 1.5 – 2.0 mm at their final published size.
- Make sure that any labeling is legible against the background, and that lines are of a suitable thickness. The recommended minimum line weight is 0.3 pt for black lines on a light background, and 0.4 pt for white lines on a black background; do not define lines as ‘hairline’ width.
- Gridlines are not allowed except for log plots.
- Remove excess space and elements from around the image.
- Type, lines or other elements not intended for publication should be removed before submission.
- Make the image orientation the same as that intended for publication.
- Flatten images prior to submission, i.e. they should not contain layers and/or transparent objects.
- Figures should have the following resolution at their final published size:

Graphs	800 – 1200 dpi
Photos	400 – 800 dpi
Color (RGB)	300 – 400 dpi

Do not use higher resolutions than those given in the table above as these will not improve the quality of your image but will produce very large files.

- An easy way to check the quality (resolution) of figures files is to use the zoom function: if an image viewed at 400% on screen is blurry (pixilated), then the image will not reproduce well in print. An image viewed at 100% on screen may look fine but will not necessarily reproduce well as the screen resolution is much lower (only 72 – 96 dpi) than that of a printing press.
- Changing the size of a digital image changes the resolution; however, as the area is increased the overall dpi actually remains the same; as an example, a photographic image that is three inches (76.2 mm) across at final size should be saved as TIFF with a width of 900 pixels (final size: 3 inch; resolution: 300 dpi). If the size is increased to six inches, a width of 1800 pixels would be required to obtain a resolution of 300 dpi.
- Images (photos) with lettering should be saved at a higher resolution (minimum 600 dpi) than a photographic image alone (minimum 400 dpi) to avoid the text and line art appearing jagged.
- Photographic images often produce very large files; however, most software has an option to compress the file using LZW compression and this will produce smaller files, especially when the image contains large areas of single color or repeating textures and patterns.

- Keeping an image simple is the best way to produce good output. Try to avoid adding more to your graph or illustration than is necessary. Avoid 3D charts, excessive shading, stipples, lines and symbols (if there are several symbols, try and add them to the legend rather than a key). When using shades of grey or other tints, be wary of using shades too close together – an ideal separation is 20%.
- Remember that supplying high-quality electronic artwork can reduce delays in production time as it minimizes the need for artwork to be resupplied.

Image manipulation

Manipulation of images is unacceptable. All figures must accurately reflect the original data. Information should not be enhanced, eliminated, added, obscured or moved. In cases where manipulation is unavoidable, this should be clearly detailed in the figure legend. All instruments, software and processes used to obtain the images must be fully detailed in the manuscript either in the figure legends or the materials and methods. Acceptable image manipulation includes uniformly adjusting the contrast of an entire image and any control images, ensuring that all original data, including the background, remains visible and that no new features are introduced. Cropping of gels, or re-positioning of lanes/fields, is permitted providing that all alterations are clearly indicated by the use of dividing lines in the image itself, vital data are not removed, an explanation of the alterations is included in the figure legend and images of full blots or gels that the figures are derived from are supplied in the supporting information. Unacceptable manipulation includes, but is not limited to, the enhancement of one feature/ band over others, removal of background noise/bands, etc. Authors must be able to produce all data in their raw format upon editorial request.

3. Online submission of manuscripts

3.1. Original manuscripts

Engineering in Life Sciences offers a web-based manuscript submission and peer review system accessible at: <http://mc.manuscriptcentral.com/els>.

To submit your manuscript online, please proceed along the following steps:

- Prepare your manuscript and illustrations in the appropriate format, according to the instructions given in this document and ensure that data are given in the correct order and style for the journal.
- In the first round of manuscript peer-review, it is not necessary to upload files separately – authors may choose to upload all relevant information in one WORD or PDF file.
- Prepare cover letter as per the guidelines in **2.3. Cover letter**.
- Log-in into your existing account or create a new account in the system by clicking on the “Create an Account” button.
- Follow the step-by-step instructions in the system to supply the requested information - online help is available.
- Reviewers: authors are requested to suggest at least four suitable reviewers and may also exclude potential reviewers by selecting them as “non-preferred” reviewers – a reason for this should be included in the cover letter.
- Authors may exit/re-enter at any stage during the preparation stage. Once a manuscript is submitted, no changes are allowed until an editorial decision has been made.

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- To monitor the progress of the peer-review process, authors may login periodically to the Author Center for status updates.
- All submissions will be converted to PDF format during the upload process. The system automatically generates one PDF file which contains all parts of the manuscript.
- **Check the final PDF!** The information in this final PDF preview is the same as that seen by the editors and reviewers, it is therefore critical that all information is provided in this file prior to clicking the “submit” button.

If you have any questions concerning the online submission program, do not hesitate to contact the editorial support at EngLifeSci@wiley.com.

3.2. Revised manuscripts

Prepare revision as follows:

- Prepare a point-by-point response letter – reviewers’ original comments should be followed authors’ response to the comment.
- Prepare a revised manuscript that contains the changes highlighted by either changing the font color or using the “track changes” mode.
- Upload the two documents above to the Online Submission site.
- Please note that when revised manuscripts are submitted online, only the changed files need to be replaced.
- **Check the final PDF!** The information in this final PDF preview is the same as that seen by the editors and reviewers, it is therefore critical that all information is provided in this file prior to clicking the “submit” button.

4. Manuscript publication

4.1. Author Services

Once an article is accepted, Wiley’s Author Services provides the functionality for authors to track the production progress of their articles. Authors will also receive free access to the final published version of their articles.

When an article is accepted, the corresponding author receives an e-mail with a unique code and link. Logging in to Author Services with the same e-mail address where the alert is received automatically connects the author to the article. Alternatively, authors may register with any e-mail address: use the "add article" feature and enter the unique code contained in the initial e-mail to connect to the article. There may be a short delay from when the article is accepted by the journal and when it has been received at Wiley.

Go to <https://authorservices.wiley.com/author-resources/index.html> for further information.

4.2. Proofs and reprints

Proofs will be sent as low-resolution PDF-file by e-mail together with a reprint order form directly from the typesetter. The proofs should be carefully corrected following the instructions within 48 hours. Authors may be charged for extensive alterations of their article. Reprints and/or high resolution PDF can be ordered at prices shown on the reprint order form.

4.3. Wiley Author Licensing Service (WALS)

Once an article is accepted, the corresponding author of the paper will receive an e-mail prompting them to login into Author Services; where via the Wiley Author Licensing Service (WALS) they will be able to complete the license agreement on behalf of all authors on the paper. The type of license agreement that needs to be completed is dependent on whether authors would like to publish the article Open Access:

4.3.1. Copyright transfer agreement

If the OnlineOpen option is not selected the corresponding author will be presented with the copyright transfer agreement (CTA) to sign. The terms and conditions of the CTA can be previewed in the samples associated with the Copyright FAQs (<https://authorservices.wiley.com/author-resources/Journal-Authors/licensing-open-access/licensing/licensing-info-faqs.html>).

4.3.2. OnlineOpen

If the OnlineOpen option is selected the corresponding author will have a choice of the following Creative Commons License Open Access Agreements (OAA):

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- Creative Commons Attribution Non-Commercial License OAA
- Creative Commons Attribution Non-Commercial – No-Derivatives License OAA

To preview the terms and conditions of these open access agreements please visit the Copyright FAQs hosted on Wiley Author Services <https://authorservices.wiley.com/author-resources/Journal-Authors/licensing-open-access/licensing/licensing-info-faqs.html> and visit <http://www.wileyopenaccess.com/details/content/12f25db4c87/Copyright--License.html>.

If you select the OnlineOpen option and your research is funded by certain funders [e.g. The Wellcome Trust and members of the Research Councils UK (RCUK) or the Austrian Science Fund (FWF)] you will be given the opportunity to publish your article under a CC-BY license supporting you in complying with your Funder requirements.

For more information on this policy and the Journal's compliant self-archiving policy please visit: <http://www.wiley.com/go/funderstatement>.

4.4. Funding Agencies Supporting OnlineOpen

4.4.1. Wellcome Trust

Authors selecting the OnlineOpen option for research funded by The Wellcome Trust and members of the Research Councils UK (RCUK) will be given the opportunity to publish the article under a CC-BY

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license supporting authors in complying with Wellcome Trust and Research Councils UK requirements. For more information on this policy and the journal's compliant self-archiving policy please visit: <http://www.wiley.com/go/funderstatement>.

4.4.2. Other funding agencies currently supporting OnlineOpen:

- Imperial College London
- FWF Austrian Science Fund
- Telethon Italy
- University of Nottingham
- UKPMC funders: <http://ukpmc.ac.uk/funders/>

4.5. Funder arrangements

Certain funders, including the NIH, Howard Hughes Medical Institute, members of the Research Councils UK (RCUK) and Wellcome Trust require deposit of the Accepted Version in a repository after an embargo period. Details of funding arrangements are set out at the following website: <http://www.wiley.com/go/funderstatement>.

Appendix A: Standard abbreviations

Bear in mind that abbreviations are hindrances to a reader working in a field other than that of the author, and to abstractors. Therefore, their use should be restricted to a minimum. Abbreviations should be introduced only when repeatedly used. Abbreviations used only in a table or a figure may be defined in the legend. Standard abbreviations may be used in the title and keywords. If nonstandard abbreviations are used in the Abstract they should be defined in the Abstract, in the list of abbreviations of the manuscript as well as when first used in the body of the paper.

A	absorbance
ACES	2-[(2-amino-2-oxoethyl)amino]ethanesulfonic acid
ACN	acetonitrile
A/D	analog to digital converter
amu	atomic mass unit
API	atmospheric pressure ionization
BCIP	5-bromo-4-chloro-3-indolyl phosphate
Bis	<i>N,N'</i> -methylenebisacrylamide
bp	base pairs
BSA	bovine serum albumin
%C	cross-linking agent (g/100 mL)/%T
CAPS	3-(cyclohexylamino)-1-propane-sulfonic acid
CBB	Coomassie Brilliant Blue
CCD	charge-coupled device
CE	capillary electrophoresis
CEC	capillary electrochromatography
CFE	continuous flow electrophoresis
CHAPS	3-[(3-cholamidopropyl)dimethyl-amonio]-1-propanesulfonate
CHES	2-(<i>N</i> -cyclohexylamino)ethane sulfonic acid
CID	collision-induced dissociation
CIEF	capillary isoelectric focusing
CMC	critical micelle concentration
Con A	Concanavalin A
CNS	central nervous system
cpm	counts <i>per</i> minute
CTAB	cetyltrimethylammonium bromide
CV	coefficient of variation
CZE	capillary zone electrophoresis
1-D	one-dimensional
2-D	two-dimensional
Da	dalton (molecular mass)
2-DE	two-dimensional gel electrophoresis
DMEM	Dulbecco's modified Eagle medium
DMF	<i>N,N</i> -dimethylformamide
DMSO	dimethyl sulfoxide

DOC	sodium deoxycholate
dsDNA	double-stranded DNA
DTT	dithiothreitol
ECL	enhanced chemiluminescence
EDTA	ethylenediaminetetraacetic acid
EEO	electroendosmosis
EGTA	ethylene glycol- <i>bis</i> (β -aminoethyl-ether)- <i>N,N,N',N'</i> -tetraacetic acid
EKC	electrokinetic chromatography
ELISA	enzyme-linked immunosorbent assay
EOF	electroosmotic flow
ER	endoplasmic reticulum
ESI	electrospray ionization
EST	expressed sequence tag
FAB	fast atomic bombardment
FBS	fetal bovine serum
FCS	fetal calf serum
FIGE	field inversion gel electrophoresis
FITC	fluorescein isothiocyanate
FT-ICR	Fourier transform-ion cyclotron resonance
GC	gas chromatography
GIF	graphic interchange format
GSH	glutathione
GST	glutathione-S-transferase
HE	hematoxylin and eosin
HEPES	<i>N</i> -(2-hydroxyethyl)piperazine-2'- <i>(2-ethanesulfonic acid)</i>
HPCE	high-performance capillary electrophoresis
HPLC	high-performance liquid chromatography
HRP	horseradish peroxidase
HSA	human serum albumin
HSP	heat shock protein
HTML	hypertext mark-up language
HVR	hypervariable region
ICR	ion cyclotron resonance
id	inside diameter
IEF	isoelectric focusing

Ig	immunoglobulin
IMAC	immobilized metal affinity chromatography
IPG	immobilized pH gradient
IPTG	isopropyl- β -D-thiogalactopyranoside
kbp	kilobase pairs
kDa	kilodalton (molecular mass)
LC	liquid chromatography
LED	light-emitting diode
LOD	limit of detection
LOQ	limit of quantitation
mAb	monoclonal antibody
MALDI-MS	matrix-assisted laser desorption/ionization-mass spectrometry
Mbp	megabase pairs
MEKC	micellar electrokinetic capillary chromatography
MES	2-(<i>N</i> -morpholino)ethanesulfonic acid
MHC	major histocompatibility complex
MOPS	3-(<i>N</i> -morpholino)propanesulfonic acid
M_r	relative molecular mass (dimensionless)
MRM	multiple-reaction monitoring
MS	mass spectrometry
MS/MS	tandem mass spectrometry
m/z	mass-to-charge ratio
NC	nitrocellulose
NEPHGE	nonequilibrium pH gradient electrophoresis
NMR	nuclear magnetic resonance
NP-40	Nonidet P-40
od	outside diameter
OD	optical density
OFAGE	orthogonal field alternation gel electrophoresis
ORF	open reading frame
PAGE	polyacrylamide gel electrophoresis
PBS	phosphate-buffered saline
PCR	polymerase chain reaction
PDMS	polydimethylsiloxane
PED	pulsed electrochemical detection
PEG	polyethylene glycol
PFGE	pulsed-field gel electrophoresis
PFU	plaque-forming units
pI	isoelectric point
PMS	phenazine methosulfate

PMSF	phenylmethylsulfonyl fluoride
PMT	photomultiplier tube
ppm	parts <i>per</i> million
PSD	post-source decay
PTFE	polytetrafluoroethylene
PTH	phenylthiohydantoin
PVA	polyvinyl alcohol
PVDF	polyvinylidene difluoride
PVP	polyvinylpyrrolidone
RFLP	restriction fragment length polymorphism
RIA	radioimmunoassay
RP	reversed phase
rpm	revolutions <i>per</i> minute
RSD	relative standard deviation
RT-PCR	reverse transcriptase-PCR
SAGE	serial analysis of gene expression
SD	standard deviation
SDS	sodium dodecyl sulfate
SEC	size-exclusion chromatography
SEM	standard error of the mean
SIM	selected ion monitoring
S/N	signal-to-noise ratio
SPE	solid-phase extraction
SPR	surface plasmon resonance
SSCP	single-strand conformation polymorphism
ssDNA	single-stranded DNA
SRM	selected-reaction monitoring
SSP	sample spot number
STR	short tandem repeat
%T	total gel concentration (acrylamide plus cross-linking agent; g/100 mL)
TBS	Tris-buffered saline
TEMED	<i>N,N,N',N'</i> -tetramethylethylene-diamine
TFA	trifluoroacetic acid
THF	tetrahydrofuran
TIC	total ion current
TLC	thin-layer chromatography
TOF	time of flight
Tris	tris(hydroxymethyl)aminomethane
U	unit
URL	uniform resource locator
UV	ultraviolet
Vh	volt hours
WWW	world wide web