This document outlines how to prepare articles for submission. We recommend you read these guidelines in full before submitting your article. A pre-submission enquiry to the Journal Editor is also strongly encouraged before submission.

BioTechniques Author Guidelines

Table of Contents

Journal aims & scope

BioTechniques is a peer-reviewed, open-access journal dedicated to publishing original laboratory methods, related technical and software tools, and methods-oriented review articles that are of broad interest to professional life scientists, as well as to scientists from other disciplines (e.g., chemistry, physics, computer science, plant and agricultural science and climate science) interested in life science applications for their technologies.

Since 1983, *BioTechniques* has been a leading peer-reviewed journal for methods-related research. The journal considers:

- Reports describing innovative new methods, platforms and software, substantive modifications to existing methods, or innovative applications of existing methods, techniques & tools to new models or scientific questions
- Descriptions of technical tools that facilitate the design or performance of experiments or data analysis, such as software and simple laboratory devices
- Surveys of technical approaches related to broad fields of research
- Reviews discussing advancements in techniques and methods related to broad fields of research
- Letters to the Editor highlighting interesting observations or cautionary tales concerning experimental design, methodology or analysis

Audience

The audience for *BioTechniques* consists of research scientists working at the laboratory bench and scientists from other disciplines (e.g., chemistry, physics, computer science, plant and agricultural science and climate science) interested in life science applications for their technologies. The journal is a valuable reference for all those whose research interests involve laboratory work in the life sciences.

At-a-glance article formatting checklist

Sections / Article	**Word limit** (excluding abstract and references)	**Abstract**	**Method Summary**	**Graphical Abstract**	**Author Contributions**	**Keywords**	**Article subheadings**	**Future Perspective & Article Highlights**	**Reference limit**	**Figures and tables permitted** (A total of 5 figures and 5 tables permitted – additional will be made supplementary)	**Supporting cover letter**	**Protocol***
Review	7000	✓	Optional	Optional	✓	✓	✓	✓	75	✓	✓	✘
Benchmark	1500	✓	✓	Optional	✓	✓	✓	✓	20	✓	✓	Encouraged
Report	3000	✓	✓	Optional	✓	✓	✓	✓	50	✓	✓	Encouraged
Letter to the Editor	1500	✘	✓	Optional	✓	✓	✓	Optional	20	✓	✓	Encouraged
White paper	4000–8000	✓	✘	Optional	✓	✓	✓	✓	50	✓	✓	✘
Editorial	1500	✘	✘	✘	✓	✓	Optional	✘	20	✘	✓	✘

*Authors are encouraged to create their protocols on protocols.io and cite them in the submission. This supports reproducibility and access to research.

Article types

BioTechniques publishes a range of article types, descriptions of which are outlined below. Authors are encouraged to consult the 'at-a-glance formatting checklist' for details on word counts and other formatting requirements.

The information below gives an overview of the requirements for each article type published by *BioTechniques*. However, authors should consult the International Committee of Medical Journal Editors (ICMJE) "*Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals*" (https://www.icmje.org/recommendations/), in particular the section on "*Preparing a Manuscript for Submission to a Medical Journal*" prior to submitting to an Expert Medicine journal, for more detailed information.

Benchmark, Report and Letter to the Editor

Authors of these peer-reviewed article types **must** provide a supporting cover letter on submission briefly detailing:

- Relevance to the journal's audience;
- Where the novelty in the study lies;
- Direct and potential implications of the findings.

Authors are also advised to consult the **Methods Reporting Checklist for Authors**, available in the appendix of this guide. In addition, the **EQUATOR Network** provides contains a comprehensive searchable database of reporting guidelines and also links to other resources relevant to research reporting.

Experimental details and data:

Only where a novel experimental procedure has been employed should full details be provided, such that a skilled scientist would be able to reproduce the results presented. Details of routine or previously reported experimental procedures should be provided via references only. Experimental procedures and/or data running to more than two Word document pages should be placed in a supplementary information file.

BioTechniques encourages authors to submit their data to an open repository, allowing readers to form a complete picture of the manuscript, and to utilize the data in future research endeavours. Repositories can be found via sites such as re3data.org. Where data has been deposited in a public repository, authors should state at the end of the abstract the dataset name, repository name and number.

Reporting of sex & gender information: Authors are encouraged to consult the SAGER Guidelines to ensure the accurate reporting of sex and gender information in study design, data analysis, results and interpretations of findings.

Authors should include ethical information in the methods section of their research articles.

1. Benchmark

Benchmarks are peer-reviewed short communications describing new methods or brief but substantive modifications of existing methods. Authors must demonstrate either significantly improved results compared to standard protocols or equivalent results with substantial time or cost savings. Benchmarks should contain a short 3–4 sentence Abstract (200 words). In addition, a 1–3

sentence Method Summary (focusing only on the method itself and not supporting data) is also required at submission. The Introduction, Results & Discussion section should be combined in Benchmark articles. Authors are encouraged to provide brief enumerated protocols using the *BioTechniques* template found in these guidelines or other appropriate supplementary materials when necessary.

Required sections: (for a more detailed description of these sections see Article sections):

- Title (maximum 120 characters)
- Author(s) names, contributions & affiliations
- Abstract (maximum 200 words)
- Multidisciplinary abstract (maximum 120 words)
- Method Summary
- Keywords (5–8)
- Main body with no subheadings
- References
- Reference annotations
- Author contributions: brief summary of the contribution of each individual meeting the criteria to be listed as an author on the manuscript.
- Disclosures: to include funding information, declaration of interest disclosures, disclosures of any writing assistance (and the funding source for this), ethical disclosures, and any other relevant information.
- Other pertinent information such as data sharing
- Figures/Tables: should be submitted as separate files (see guidelines below)

2. Report

Reports describe new techniques, materials, and protocols useful in biological and biochemical research laboratories. Manuscripts should present well-rounded studies reporting either innovative methodological advances or novel modifications to existing methods that are of substantive value to the field. Reports should contain four sections: (i) Abstract, (ii) Introduction, (iii) Materials and Methods, and (iv) Results and Discussion. A 1–3 sentence Method Summary (focusing on only the method itself and not supporting data) is required at submission.

Required sections: (for a more detailed description of these sections see Article sections):

- Title (maximum 120 characters)
- Author(s) names, contributions & affiliations
- Abstract (maximum 200 words)
- Multidisciplinary abstract (maximum 200 words)
- Method Summary
- Keywords (5–8)
- Introduction
    - Should only cite directly pertinent references
    - Should not include data or conclusions from the work being reported
- Materials & methods/Experimental
    - Where an organization was paid or otherwise contracted to help conduct the research (e.g., data collection and management), this should be detailed
    - Should include information indicating that the research was approved or exempted from the need for review by the responsible review committee (institutional or national). Where no formal ethics committee is available, a statement indicating that the research was conducted according to the principles of the Declaration of Helsinki should be included

    - Information on the selection and description of participants should define how authors measured race or ethnicity and justify their relevance
- Results & Discussion
    - Numeric results should be given not only as derivatives (e.g. percentages) but also as the absolute numbers from which the derivatives were calculated
    - Statistical significance of results should be specified, if any
    - Authors should avoid claiming priority or alluding to work that has not been completed
- Conclusions
- Future perspective
- Article highlights
- References
- Reference annotations
- Disclosures: to include funding information, declaration of interest disclosures, disclosures of any writing assistance (and the funding source for this) and any other relevant information.
- Author contributions: brief summary of the contribution of each individual meeting the criteria to be listed as an author on the manuscript.
- Ethical conduct of research
- Other pertinent information such as data sharing
- Figures/Tables: should be submitted as separate files (see guidelines below)

3. Letter to the Editor

Letters to the Editor highlight interesting observations or cautionary tales concerning experimental design, methodology or analysis. Authors should present their observations with supporting data and recommend potential solutions to the problems raised.

Required sections: (for a more detailed description of these sections see Article sections):

- Title (maximum 120 characters)
- Author(s) names, contributions & affiliations
- Multidisciplinary abstract (maximum 200 words)
- Keywords (5–8)
- Main body with no subheadings
- References
- Reference annotations
- Disclosures: to include funding information, declaration of interest disclosures, disclosures of any writing assistance (and the funding source for this) and any other relevant information.
- Other pertinent information such as data sharing

For authors presenting the results of clinical trials, the guidelines recommended by CONSORT and GPP3 should be followed. In addition, where available the clinical trial registration number should be included at the end of the abstract, and on the first mention of the trial in the main body of text. Unregistered clinical trials should be declared as such, and the reason for nonregistration should be provided. Mention of other trials should also include the relevant registration number, where available.

Secondary outcomes, exploratory analyses, and *post hoc* analyses should be clearly identified as such; these may be included in the primary publication or published separately, in which case they should clearly reference the primary publication and should not be published before it.

Diagnostic accuracy studies: Where a diagnostic accuracy study has been carried out, authors should follow the recommendations of STARD.

Observational studies: Where observational research has been carried out, authors should follow the recommendations of STROBE.

Review

Reviews aim to highlight recent significant advances in research, ongoing challenges and unmet needs; authors should be concise and critical in their appraisal of the subject matter and strive for clarity. These are surveys of technical approaches related to broad fields of research. Authors should present a balanced perspective on the subject, avoid overemphasis of their own work, and attempt to acknowledge all significant contributions to the field. While Reviews are generally solicited by the editors; prospective authors are welcome to submit proposals.

For additional information on the scope and format of Reviews, please contact the editors directly.

Required sections: (for a more detailed description of these sections see Article sections):

- Title (maximum 120 characters)
- Author(s) names, contributions & affiliations
- Abstract (maximum 200 words)
- Keywords (5–8)
- Introduction
- Body of article
- Conclusions
- Future perspective
- Article highlights
- References
- Reference annotations
- Disclosures: to include funding information, declaration of interest disclosures, disclosures of any writing assistance (and the funding source for this) and any other relevant information.
- Author contributions: brief summary of the contribution of each individual meeting the criteria to be listed as an author on the manuscript.
- Figures/Tables: should be submitted as separate files (see guidelines below)

White Paper

White Papers are authoritative reports that bring together the opinions and current thinking of leading stakeholders or recognized experts. They may offer recommendations, outline proposals and aim to set out current 'consensuses' related to an issue. The issue under discussion should be of immediate importance to the advancement of the field. White Papers will be accepted at the discretion of the Editor.

Word limit: 4000–8000 words (excluding abstract, keywords and references).
Required sections: (for a more detailed description of these sections see Article sections):

- Title (maximum 120 characters)
- Author(s) names & affiliations
- Abstract (maximum 200 words)
- Keywords (5–8)
- Body of article
- References: limit of 50 references
- Acknowledgements: author acknowledgements, plus, where relevant, details of individuals who contributed to the article, but who did not fulfill the criteria to be listed as authors

- Disclosures: to include funding information, financial and/or conflict-of-interest disclosures, disclosure of any writing assistance (and the funding source for this), and any other relevant information.
- Author contributions: brief summary of the contribution of each individual meeting the criteria to be listed as an author on the manuscript.
- There is a combined limit of 4 figures and tables. Any additional tables and figures must be submitted as supplementary information, which will be available online only. All figures/tables should be submitted as separate files.

Interviews

Interviews are conducted with key opinion leaders in the field and can include a look back over their career and achievements to date, a discussion on their current research, and their thoughts and observations on the field as a whole. Individuals are invited to take part in an Interview, either verbal or written, at the Editor's discretion, and the contents of the interview undergo internal review. The opinions expressed in an Interview are those of the Interviewee, and do not necessarily reflect the views of Taylor & Francis.

Word limit: 1500 words
Required sections: (for a more detailed description of these sections see Article sections):
▪ Title (maximum 120 characters)
▪ Interviewee name & affiliation
▪ Summary/biographical paragraph
▪ Series of questions for discussion (provided by the Journal Editor)
▪ Response from the author to each point
▪ Additional reference sources for the interested reader
▪ Disclosures: to include funding information, declaration of interest disclosures and any other relevant information.

Editorials

Editorials are short articles that provide an insight into, or snapshot of issues of topical importance to the journal's target audience or researchers and other professionals. The intention is that the article should offer an expert perspective on a topic of recent interest. All editorials undergo external peer review.

Word limit: 1500 words maximum (excluding keywords and references).
Required sections: (for a more detailed description of these sections see Article sections):
▪ Title (maximum 120 characters)
▪ Author(s) names & affiliations
▪ Keywords (5–10)
▪ Body of article
▪ References: A maximum of 20 references are permitted
▪ Acknowledgements: author acknowledgements, plus, where relevant, details of individuals who contributed to the article, but who did not fulfill the criteria to be listed as authors
▪ Disclosures: to include funding information, financial and/or conflict-of-interest disclosures, disclosure of any writing assistance (and the funding source for this), and any other relevant information.
▪ Author contributions: brief summary of the contribution of each individual meeting the criteria to be listed as an author on the manuscript.
▪ Please note: No figures, tables or boxes are permitted in editorials

Article sections

The following list provides notes on the key article sections; authors should consult the 'At-a-glance formatting checklist' to determine which sections are required for their submission.

Title

Concisely and clearly conveys the scope/novelty of the article including any key words or phrases people might use to search on the topic; not more than **120 characters**. Should not include abbreviations if possible and should avoid redundant language such as "A study of…".

Author(s) names & affiliations

Including full name, postal address, phone and fax numbers, and e-mail address. Note: we can only list one corresponding author. Where available, authors should also add their ORCID iD during the manuscript submission process. For more information on ORCID, see below. Where patient authors are included, **an affiliation of 'Patient author' should be included** (alongside any additional affiliation desired), to facilitate discoverability on indexing services such as PubMed.

Patient authorship:

Taylor & Francis journals are supportive of the inclusion of patients in all stages of research, including in the authorship of papers. Patient authors should be aware that they must provide an email address during submission to allow communications relating to the progress of their paper. In the event that the patient author is the corresponding author, please note that the email address provided upon submission will be published in the final article and made available to the general public. Patient authors should carefully consider whether to use an existing personal email address or to create an alternate email address that can be used for their authored works. Patient authors can include:

- **A person who lives with or is affected by a disease or condition** (i.e., a broad definition of patient that includes those with lived conditions or receiving health or social care, caregivers, family members and members of patient advocacy groups who represent them)
- **A person who provides unique and valuable input from the patient perspective to the publication**.
- **Patients must meet the ICMJE authorship criteria. You can find the criteria for this on our defining authorship page here: https://authorservices.taylorandfrancis.com/editorial-policies/defining-authorship-research-paper/.** Authors are encouraged to refer to this tool, which highlights how each of the four criteria above can be interpreted from the patient author perspective.

Further useful information for patient authors can be found here:
https://authorservices.taylorandfrancis.com/editorial-policies/guidance-for-patient-authors/

Group authorship:

When a group name is included as an author (e.g., the XYZ Study Group), the respective group member names should be listed in the acknowledgements section. In relevant Medline/PubMed-indexed journals, these individuals are acknowledged as contributors to the article. The submitting author/agent should therefore ensure that group member names are included in full, are spelled correctly, and appear in the order they wish them to be listed on Medline/PubMed. More guidance from Medline can be found here: https://www.nlm.nih.gov/bsd/policy/authorship.html.

Abstract

Not more than **200 words**; no references should be cited in the abstract. The abstract should highlight the importance of the field under discussion within the journal's scope, and clearly define the parameters of the article.

For authors presenting the results of clinical trials, the guidelines recommended by CONSORT should be followed when writing the abstract, and the clinical trial registration number included at the end of the abstract, where available.

Data deposition: where data have been deposited in a public repository, authors should state at the end of the abstract the data set name, repository name and number.

Multidisciplinary abstract

Multidisciplinary abstracts are a summary of an article with scientific jargon specific to your discipline removed – the aim of these is to make an article more accessible and discoverable by readers outside of your subject area – they are particularly useful to undergraduate students as well as researchers from any discipline area. Multidisciplinary abstracts should be of a similar length to a regular abstract (200 words), or shorter.

Method Summary

Where required, please include a 1–3 sentence description of the method introduced in the manuscript. This should be concise and clearly detail the methodological novelty of the research. Please do not discuss experimental results or the advantages of the methods.

Keywords

Up to eight keywords (minimum of five), including therapeutic area, mechanism(s) of action etc., plus names of drugs and compounds mentioned in the text.

Body of the article

Article content should be arranged under relevant headings and subheadings to assist the reader.

Future perspective

A speculative viewpoint on how the article will impact the field, what further research is needed, etc.

Article Highlights

Not more than 600 words. Bulleted summary points that illustrate the main conclusions made throughout the article. Where appropriate, relevant headings that correspond to those in the manuscript should be inserted.

Example:

- Fampridine-Sustained Release is the only drug approved to treat walking disability in patients with multiple sclerosis.
- Around a third of the patients on treatment achieve a significant improvement.
- The effects appear soon after the start of the treatment, are long-lasting, but disappear soon after the drug is withdrawn.
- So far, it is not possible to predict whether a patient will be a responder or not.
- The efficacy of the treatment should be assessed after 2–4 weeks.
- The dose is 10 mg daily, and should not be increased due to the risk of seizures.
- It is contraindicated in patients with renal impairment, history of seizures or on treatment with OCT2 inhibitors.
- The adverse events are mild to moderate and transitory. The most frequently reported were insomnia, headache, fatigue, back pain, dizziness, nausea and balance disorders.

Accession Numbers

All appropriate datasets, images, and information should be deposited in public resources. Please provide the relevant accession numbers (and version numbers, if appropriate) after first use of the entity and at the end of the abstract (see "abstract" section above). Please also provide accession numbers of all entities such as genes, proteins, mutants, diseases, etc. for which there is an entry in a public database.

Author contributions

CRediT (Contributor Roles Taxonomy) statements can be provided on the Title Page during the submission process and should correctly list the contributions of each author made to the manuscript. This statement will be published in the article. Please refer to the Author Disclosure Form for our authorship criteria. Below is a list of the terms with their definitions that can be used in Author Contributions section. This information was taken from CRediT – Contributor Roles Taxonomy (niso.org).

- Conceptualization: Ideas; formulation or evolution of overarching research goals and aims
- Data curation: Management activities to annotate (produce metadata), scrub data and maintain research data (including software code, where it is necessary for interpreting the data itself) for initial use and later re-use
- Formal Analysis: Application of statistical, mathematical, computational, or other formal techniques to analyze or synthesize study data
- Funding acquisition: Acquisition of the financial support for the project leading to this publication
- Investigation: Conducting a research and investigation process, specifically performing the experiments, or data/evidence collection
- Methodology: Development or design of methodology; creation of models
- Project administration: Management and coordination responsibility for the research activity planning and execution
- Resources: Provision of study materials, reagents, materials, patients, laboratory samples, animals, instrumentation, computing resources, or other analysis tools
- Software: Programming, software development; designing computer programs; implementation of the computer code and supporting algorithms; testing of existing code components
- Supervision: Oversight and leadership responsibility for the research activity planning and execution, including mentorship external to the core team
- Validation: Verification, whether as a part of the activity or separate, of the overall replication/reproducibility of results/experiments and other research outputs
- Visualization: Preparation, creation and/or presentation of the published work, specifically visualization/data presentation
- Writing – original draft: Preparation, creation and/or presentation of the published work, specifically writing the initial draft (including substantive translation)
- Writing – review & editing: Preparation, creation and/or presentation of the published work by those from the original research group, specifically critical review, commentary or revision – including pre- or post-publication stages

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Acknowledgements

Author acknowledgements, plus, where relevant, details of individuals who contributed to the article, such as study group members, or those who contributed but who did not fulfill the criteria to be listed as authors.

Disclosures

Please see the *BioTechniques* Instructions for Authors page for details on required disclosures and ethical conduct of research information. Disclosures should include:

- Funding
- Declaration of interests
- Acknowledgements
- Author Contributions
- Writing assistance disclosure, along with any sources of funding for such assistance
- Ethical conduct of research

Example writing disclosure:

"Medical writing and editorial support were provided by WRITER of MEDICAL COMMUNICATIONS COMPANY, and were funded by COMPANY A."

References

Key points

- References should be numerically listed in the reference section in the order that they occur in the text.
- Please ensure no references are duplicated in the reference list.
- References should appear as a number i.e., [1,2] in the text in square brackets. (Please move any superscript reference citations, to inside the sentence-end punctuation). All reference citations in the text should appear at the end of the sentence, prior to punctuation. (e.g., "….[2]."
- Please follow our required reference format: Author A, Author B, Author C, et al. Title of article. Abbreviated Journal Title. Date; volume(number):pages. Please list all authors where there are fewer than four.
- Please include your websites / patents in the main reference list – if citing a website, please ensure your access date is also included. If you have included a weblink in the main text, please change this to a numbered citation and include it within the reference list.
- For an Endnote referencing style, please click the following link: https://endnote.com/style_download/tf-standard-nlm/
- For more information on our referencing style, please look under the heading 'Journal' on page 3 in the following link: https://www.tandf.co.uk//journals/authors/style/reference/tf_NLM.pdf

Reference annotations

Papers or of particular interest should be identified using one or two asterisk symbols:

- * = of interest
- ** = of considerable interest

Each of the chosen references should be annotated with a brief sentence explaining why the reference is considered to be of interest/particular interest.

Example:

59. Cardillo TM, Sharkey RM, Rossi DL, Arrojo R, Mostafa AA, Goldenberg DM. Synthetic lethality exploitation by an anti-Trop-2-SN-38 antibody–drug conjugate, IMMU-132, plus PARP inhibitors in *BRCA1/2*-wild-type triple-negative breast cancer. *Clin. Cancer Res.* 23(13), 3405–3415 (2017).

•• **This preclinical study demonstrated antitumor responses of an anti-Trop2 antibody–drug conjugate in both mouse and monkey models.**

Making the most of your article

We encourage authors to enhance their article with various digital features to help readers discover and learn about their research. With in-house graphics and video teams, we can offer a range of services to assist you in the preparation of all digital enhancements. If you are interested in including any digital enhancements with your article, please contact pubsols@tandf.co.uk at any stage.

All digital features undergo peer review. With the exception of graphical abstracts, digital features are published alongside the article as supplementary materials and can be accessed via a thumbnail on the article page. All digital features can be accessed free of charge. Authors retain the copyright of any digital feature they submit to us.

When submitted with the original submission, there are no costs to publish a digital feature. Costs are incurred if we are required to create or edit the feature.

Digital features (apart from graphical abstracts) can be added post-publication. In this instance, a fee of $500 is charged to take into account the additional editorial and publication processing time and costs.

BioTechniques.com

Biotechniques is partnered with the digital platform BioTechniques.com.

"Peek Behind the Paper" Interviews

"Peek Behind the Paper" interviews are a popular option to provide further insight into your newly published method or protocol. These short interviews, conducted with you or a member of your research group, offer background information and context about your research published in *Biotechniques*. The interview will be featured on BioTechniques.com and promoted through our e-newsletters and social media platforms, ensuring your work reaches the widest possible audience. If you're interested in participating, please let us know so we can schedule an interview.

Plain Language Summaries

Plain Language Summaries (PLS) provide a summary of an article in non-technical, jargon-free language that is understandable to non-specialist audiences. These are valuable to a range of readers, including patients, patient advocates, the general public, non-specialist clinicians, research scientists, decision-makers and a range of professionals in the healthcare community.

Expert Medicine journals offer several options for authors who wish to publish a PLS, details of which can be found below, along with links to external useful resources.

Plain Language Summary (within article)

Plain Language Summaries (PLS) within an article are a short, text-only summary of the article with any technical jargon removed. PLS should be of a similar length to a regular abstract or shorter (no more than 250 words) and are featured within an article alongside the main abstract (and on PubMed, for journals that are indexed there). PLS are peer reviewed, and wherever possible should be submitted at the same time as the manuscript.

Plain Language Summary (alongside article)

Longer form PLS, providing a more detailed summary of the paper, can also be submitted as a supplementary file alongside an article submission. Any format will be considered, including written, video and audio format.

For authors wishing to feature a PLS alongside their article, we offer a writing and development service. If you are interested in learning more, please contact PlainLanguageSummaries@taylorandfrancis.com.

Standalone Plain Language Summary of Publication articles

Plain Language Summary of Publication articles (PLSPs) can be published in all Expert Medicine journals. These are standalone articles published in the journal with their own unique DOI and are thus fully citable. They are plain language, visually enriched articles that provide a summary of a key publication, from an Expert Medicine journal or elsewhere.

PLSPs are written by authors of the original publication, ideally with a patient as co-author (although this is not mandatory). Additional authors not involved with the original publication can be included in the PLSP; however, they must meet the authorship criteria stipulated by the ICMJE. Following submission of the PLSP to the appropriate Expert Medicine journal, prior to styling into our PLSP template, it will be externally peer reviewed for readability and understanding by suitable individuals selected by the Journal Editor on the basis of experience and expertise.

PLSPs are peer reviewed by both plain language peer reviewers, including Taylor & Francis PLSP Advisory Panel members, and scientific peer reviewers, all of whom follow our specific guidance on evaluating PLSPs (Plain Language Summary of Publication Peer Review Guidance).

The plain language peer reviewers are composed of patients, patient advocates, and others with expertise in developing material specifically intended for patients and nonspecialist audiences. They evaluate the PLSP's readability and ease of understanding, while the scientific peer reviewers confirm that the PLSP content accurately reflects the original article's methodology, data, and findings.

Separate guidelines are available for the preparation of standalone PLSPs. If you are interested in submitting a standalone PLSP, please contact PlainLanguageSummaries@taylorandfrancis.com to discuss the next steps.

Please note all standalone PLSP in Expert Medicine journals are published on an open access basis so they are freely accessible to all wanting to understand the latest research. This includes hybrid journals where publishing open access is usually optional. There is an article publishing charge (APC) to cover the costs associated with publishing the PLSP. The APC to publish a PLSP in Expert Medicine journals is $5,500 / £4,400 / €5,330 / AUD 7,678, plus VAT or other local taxes where applicable in your country. There is no submission charge. PLSPs are not eligible for the waiver programme that usually applies in our fully open access Expert Medicine journals.

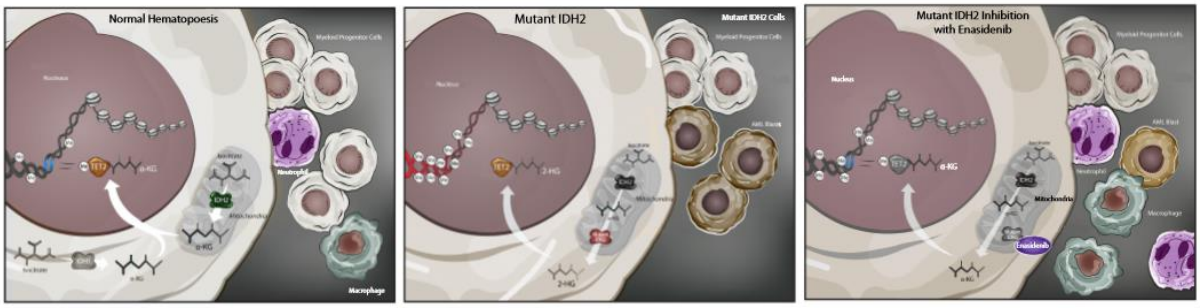
The PLSP APC covers the following:

- Publishing the PLSP open access under a CC BY-NC-ND license
- Editorial review of the PLSP prior to publication, including internal review, external peer review by patient/lay/plain language experts, scientific peer review and editorial feedback (in terms of content, readability and design)
- In-house processing of the PLSP from submission to publication
- Full design of the final article, including creation of additional imagery, re-styling of graphics and layout into a patient-friendly format
- Online hosting of the PLSP with keywords and other tools to enhance discoverability on our journal website and associated Plain Language Summaries website
- Dissemination across social media (X, LinkedIn and Facebook) using relevant hashtags and mentions

- Indexing on relevant database, such as Medline, where applicable (in accordance with the journal's indexing status)
- Liaison with relevant patient organization to ensure they are aware of the PLSP as a tool to educate and inform their members

Graphical abstract

All Expert Medicine journals encourage the use of graphical abstracts; a concise, visual summary of the main findings of the article, helping readers to quickly understand the findings of the paper and its relevance to them.

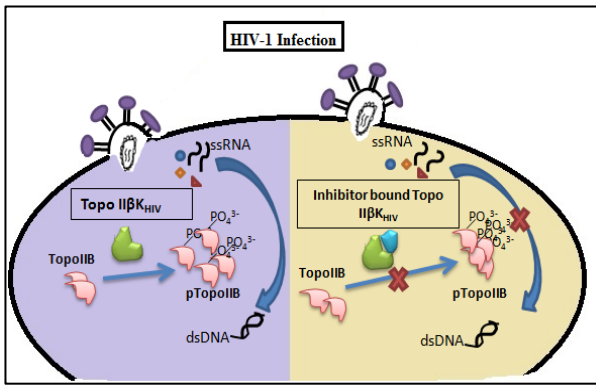


Graphical abstracts are made freely accessible to all readers and feature prominently on the article webpage alongside the main abstract.

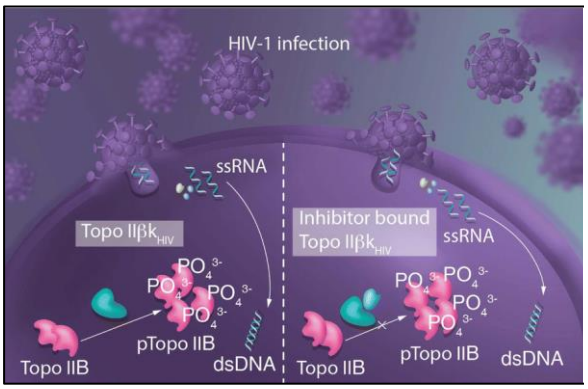
Graphical abstracts are peer reviewed alongside the article and should be submitted with the first draft. However, this does not need to be the final version – we are happy to accept a rough sketch or equivalent that will resemble the final version. The final version can then be created whilst the draft is being reviewed and finalized based on the reviewers' feedback.

Submission requirements: Authors should provide a single image or split panels in one image, ideally using font HELVETICA; size 8 points. Files should be supplied as a .jpg, .pdf or .tif file. If required, we can provide a range of design support services, from polishing an existing figure to completely creating the graphical abstract from a hand-drawn figure. Please contact pubsols@tandf.co.uk to discuss these services and the fees involved.

Before



After



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Infographics provide a useful summary of all the essential information on the trial and a visual, in-depth overview of the information presented in the article. Infographics appear at the end of the article PDF and online alongside the article. An example infographic is shown below.

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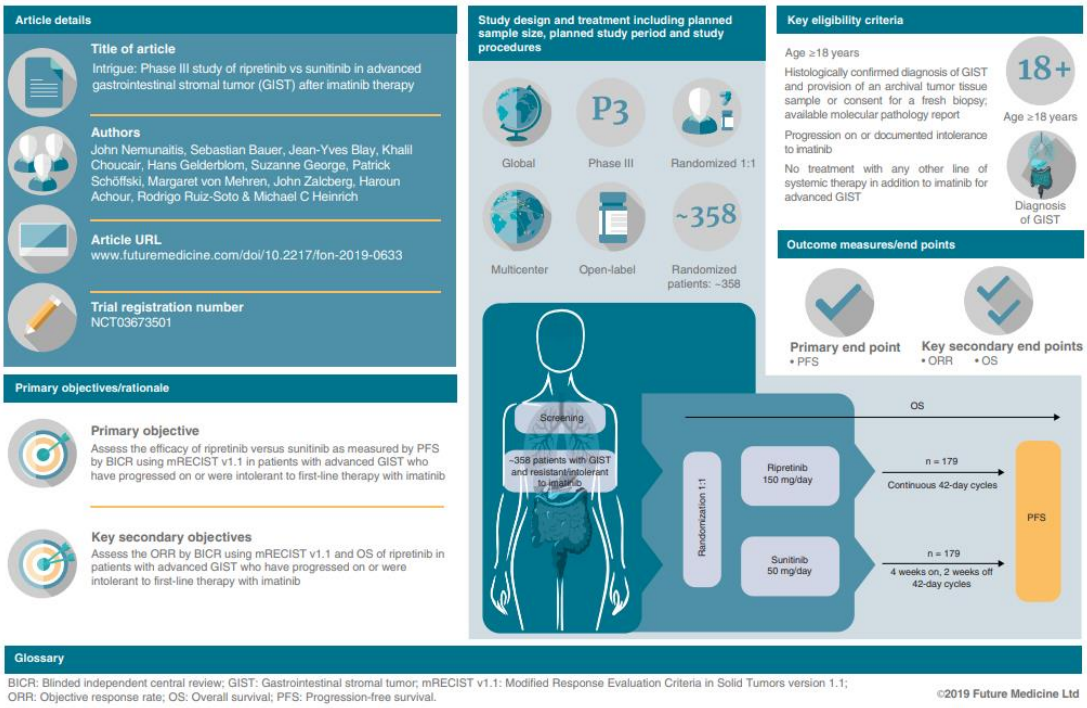

Videos

With more and more content being consumed in video format, we offer a number of options to help authors summarize their scientific research and journal articles through engaging videos.

Video abstracts are short, 2–3-minute videos that provide the reader with a summary of the paper. Typically produced by the author, these can be published alongside articles free of charge. For an example video abstract, please visit www.doi.org/10.2217/fon-2017-0636.

Animated videos provide a ~90 second overview of a research paper where the article is converted into a bespoke animation with an engaging voiceover script. Videos are featured alongside the journal publication and also hosted on the *Video Journal of Biomedicine* with their own citable DOI and the video transcript and metadata. All animated videos are published free to access, even if you have not chosen our open access option. An example can be found here: https://doi.org/10.1080/vjbm-2023-0012

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Figure/table/box guidelines

- **File submission:** All figures, tables and boxes, including any supplementary files, should be **submitted as separate files**, not within the main manuscript document.
    - It is acceptable to include e.g., one table file with multiple tables included, but this should be a separate document to the main text file.

- **File format:** Figures, tables and boxes should be submitted in an **editable format** where possible. Please submit figures in eps, illustrator, jpeg, ISISdraw or ChemDraw format (if these formats are not possible, figures can be submitted in PowerPoint or Word as a last resort).
  Tables/boxes should be provided as e.g., Microsoft Word or Microsoft Excel files, and must be editable. If you are uncertain whether the format of your files is appropriate, please check with the Journal Editor.
- **Resolution:** Figure resolution should be as high as possible, ideally 300 dpi or higher for a .jpg. Images that are blurry or illegible in any way will not be accepted.
- **Font:** If possible, please use Helvetica 8pt.
- **Abbreviations:** All abbreviations used within Figures/tables/boxes should be defined in the legend (even if previously defined in the body of the manuscript).
- **Photomicrograph:** Please ensure that **scale bars** are included in figures where appropriate (e.g., photomicrographs). Symbols, arrows or letters used in photomicrographs should contrast with the background. Please explain internal scale and identify the method of staining in photomicrographs.
- **Editing of figures:** *Biotechniques* applies the Council of Science Editors recommendations for digital images, specifically:
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  - Adjustments of brightness, contrast, or color balance are acceptable if they are applied to the whole image and as long as they do not obscure, eliminate, or misrepresent any information present in the original.
  - The grouping of images from different parts of the same gel, or from different gels, fields, or exposures must be made explicit by the arrangement of the figure (e.g., dividing lines) and in the text of the figure legend.
  - If the original data cannot be produced by an author when asked to provide it, acceptance of the manuscript may be revoked.

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Chemical structures

If possible, please submit structures drawn in ISISDraw or ChemDraw format. However, chemical structures can be redrawn in-house. Please use the following conventions:

- Always indicate stereochemistry where necessary – use the wedge and hash bond convention for chiral centers and mark cis/trans bonds as such.
- Draw small peptides (up to five amino acids) in full; use amino acid abbreviations (Gly, Val, Leu, etc.) for larger peptides.
- Refer to each structure with a number in the text; submit a separate file (e.g., not pasted throughout the text) containing these numbered structures in the original chemical drawing package that you used.

Protocols & Software

Protocols

BioTechniques recommends authors submit concise, reproducible protocols to protocols.io. An example of such a protocol can be found here: http://bit.ly/2rPyrkL.

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Software and associated documentation should be available on the author's web site or a suitable repository for editor and reviewer access at the time of manuscript submission. Authors are required to guarantee the availability of software and documentation for 3 full years following publication.

Units of measurement

- Measurements of length, height, weight and volume should be reported in metric units (meter, kilogram or liter) or their decimal multiples.
- Temperatures should be in degrees Celsius.
- Centrifuge speeds should be given in g rather than rpm.
- Any other units should be reported using the International System of Units (SI) where possible.

Statistics

- Describe statistical methods with enough detail to enable a knowledgeable reader with access to the original data to judge its appropriateness for the study and to verify the reported results.
- When possible, appropriate indicators of measurement error or uncertainty (such as confidence intervals or error bars) should be included.
- Please define any statistical terms, abbreviations and symbols used.

Product brand names

- Product brand names should not appear in the Title or Summary.
- Ideally brand names should only be used once in the main paper, in parentheses following the first mention of the generic name (please give both EU and US brand names where appropriate). The generic name should then be used thereafter.
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Authors submitting preprints to bioRxiv have the option to submit their work directly to *BioTechniques*. Authors can choose to submit their manuscript for consideration at *BioTechniques* through the Direct Transfer program. Authors are able to transfer their manuscript files and metadata directly from bioRxiv to the journal, saving re-entering author information during the submission process.

Material sharing

Authors are expected to make biological materials described in their article available upon reasonable request from researchers. Authors are encouraged to deposit biological materials to public repositories such as Addgene, ATCC, DNASU, Fungal Genetic Stocks Center, European Mouse Mutant Archive, EuroScarf, Knockout Mouse Project, Jackson Laboratory, Mutant Mouse Regional Resource Centers, PlasmID. Depositing with repositories enables preservation, authentication, and timely access to relevant new materials generated in publications so that future researchers to perform replication or follow-on studies.

Cell line authentication

Authors are encouraged to authenticate all cell lines used in their research efforts. *BioTechniques* specifically requires authors to check any cell lines used in their experiments against the current database of misidentified cell lines curated by the International Cell Line Authentication Committee (ICLAC) available at http://iclac.org/databases/crosscontaminations/. Any cell line appearing in this database used in an experiment in a submitted manuscript must be accompanied by recent cell line authentication data (e.g. short tandem repeat profiling) to support the proper identification of the cell line used in the experiments. In addition, reviewers and editors reserve the right to request additional cell line authentication data for all cell lines used in any experiment described in a submitted manuscript. For further information on this policy, please contact the editors.

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BioTechniques takes part in the Resource Identification Initiative, an effort designed to provide unique identification numbers for biomedical reagents used in research. The numbers provided by the Resource Identification Initiative through their website portal are called Research Resource Identifiers (RRIDs). *BioTechniques* requests that all authors provide appropriate RRIDs for any antibodies or genetically modified organisms referenced within their manuscripts. Authors can check the Research Identification Portal (https://scicrunch.org/resources) to find the correct RRID for any specific antibody or genetically modified organism.

An example of proper antibody RRIDs citation in a manuscript is: “Using antibodies available in our laboratory, including a commercial antibody against β- tubulin (PA5–16863; Thermo Fisher Scientific, Waltham, MA; RRID: AB_10986058).”

Note that for all antibodies and other reagents, authors should now include manufacturer, location, catalog number, and RRID. For additional information on locating specific RRIDs, visit https://scicrunch.org/ or contact the editors.

Protocol submissions

General requirements

Protocols that are created in connection with the preparation of your manuscript should be uploaded to Protocols.io. Please note that we cannot accept protocols that have also been prepared for distribution by a manufacturer with a commercial product. If a protocol is available with your manuscript, be sure to include a reference and the DOI in the reference section of your article. Each protocol should be detailed and organized so that a researcher could print out the protocol and perform the experiment using only that document. Feel free to include any commentary, hints, data tracking systems, charts, etc. that you find useful when carrying out the experiments.

Protocol format

Protocols should be formatted to suit Protocols.io and include the following sections (where applicable).

Reagents

Please list all of the reagents used in performing the experiment and the vendor name and location. For reagents that are unusual or difficult to find, please also include a catalog number. Reagents that are purchased ready-to-use should be listed in this section.

Procedure
Include the title of each major step (such as tissue collection, cell lysis, neutralization, precipitation, etc.) as a heading with each task numbered below. Numbers should be continuous throughout the procedure. For example, the first heading may include steps 1-4 and the second heading steps 5-7.

- Helpful hints: Provide any commentary or hints that will help the investigator correctly perform the experiment.
- Attention: Draw attention to any critical steps with specific instructions on the correct procedure, what makes this step critical, and what to do to ensure success. Is it dependent on timing, dilution, speed, temperature, etc.?
- Rest: Please note any steps where the experiment can be stopped, the duration that it can be held (overnight, 2 h, etc.), and instructions for properly holding (4°C, with shaking, in the dark, etc.).

Figures and tables
Useful figures, graphs, charts, etc. can be used. They must be included as separate files and adhere to our figure requirements as stated above. Tables should be created in Microsoft Word and included as part of the protocol text.

Recipes
List the recipes of all solutions made in the laboratory. Reagents purchased ready-to use do not need to be listed in this category, but all purchased reagents that require modification (such as dilution or addition of β-mercaptoethanol) should be listed here.

Troubleshooting
If known, please list common problems, possible causes, and methods of correction. This can be submitted as a table or listed in the text.

Equipment
List all equipment used with the accompanying vendor name. Upon first mention in the text, also include the vendor's location (city/state and country). Include catalog numbers for equipment that may be difficult to find.

References
List all necessary references in the same format detailed above.

These are guidelines for structuring your document, but not all categories may apply. When submitting your protocol, please submit it alongside your article as a supplementary document for review.

Protocols.io
A digital object identifier (DOI) can be assigned to the protocol as a permanent link to the method, which can then be dynamically updated.

To include a link to a protocol in your manuscript:

1) Add your step-by-step protocol on protocols.io and then follow the instructions here: https://www.protocols.io/help/new-methods-development/publish-articles.

2) Select either 'Publish' or 'Reserve DOI' to generate the link(s) to put in your manuscript (it is recommended to publish and make the protocol fully available, though we acknowledge that some authors may prefer to keep their protocol private initially)

3) Provide editor and reviewer access by Including the DOI (and anonymised private) link(s) and a reference for your protocol in the relevant section of your manuscript using the format provided by protocols.io: http://dx.doi.org/10.17504/protocols.io.xxxxxxx (where xxxxxxx is the unique DOI).

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5) Once the journal article has been published: If the DOI was reserved, you'll need to return to your protocol and select 'Publish' to make the protocol publicly available. Remember to also remove any private links from your manuscript and only leave the DOI.

Methods Reporting Checklist for Authors

In accordance with the guidelines that emerged from a workshop led by the NIH, aimed at enhancing the scientific rigour and reproducibility of published results (accessed here), we have taken measures to ensure that we are promoting good reporting standards. The checklist below is designed to establish if you have fulfilled the standards required by our journals. We suggest uploading a copy with your manuscript upon submission.

Please check the below and indicate if the following information is available in your manuscript (or supplementary material). In cases where you have confirmed that the stipulated information is present in your article, please detail where it can be found by providing the page/paragraph/line number. If you feel that inclusion of this information is not applicable to your study, please indicate this in the column titled N/A.

For types of studies not covered by the methods checklist below, we recommend you consult the Equator Network website to identify a suitable guideline.

General Methods	**Yes – information is located on page/paragraph/line:**	**N/A**
1. I have detailed the exact sample size (*n*) for each experimental group/condition, as a number, not a range		
2. I have explained how sample size was chosen (in terms of having enough statistical power to make inferences about the sample)		
3. For animal studies, I have included a statement about sample size estimate (NB. applicable even if no statistical methods were used)		
4. A description of the sample collection is included, enabling the reader to understand whether the samples represent technical or		

	biological replicates (including how many animals, litters, culture, etc.)		
5.	I have defined how many times the experiment was replicated		
6.	I have detailed inclusion/exclusion criteria in cases where samples or animals were excluded from the analysis. I have detailed if the criteria were pre-established		
7.	I have clarified the method of randomization that was used to determine how samples/animals were assigned to experimental groups		
8.	For animal studies: I have included a statement detailing whether or not randomization was used		
9.	For animal studies: I have included a statement detailing whether or not blinding was done		
10.	I have stated the extent to which the investigator was blinded to the group allocation during the experiment and/or when assessing the outcome		

Statistical Testing	**Yes – information is located on page/paragraph/line:**	**N/A**
1. Statistical methods and measures have been defined: There is no need to describe very common tests, but more complex techniques should be described in the methods section. (For small sample sizes (n<5) descriptive statistics are not appropriate, instead plot individual data points)		
2. I have stated if tests are one-sided or two-sided		
3. Statistical test results have been included e.g., *P* values		
4. 'Center values', such as median or mean have been defined		
5. Error bars (e.g., s.d. or s.e.m. or c.i.) have been defined		

6. I have stated if the data meet the assumptions of the tests (e.g., normal distribution)		
7. I have clarified if there is an estimate of variation within each group of data and, if so, I have detailed if the variance is similar between the groups that are being statistically compared		

Reagents	**Yes – information is located on page/paragraph/line:**	**N/A**
1. I have provided evidence that the antibodies were profiled for use in the system under study (assay and species), by giving a citation, catalog number and/or clone number, supplementary information or reference to an antibody validation profile (e.g., Antibodypedia, 1DegreeBio)		
2. I have clearly identified the source of cell lines and reported if they were recently authenticated (e.g., by STR profiling) and tested for mycoplasma contamination		

Animal Models†	**Yes – information is located on page/paragraph/line:**	**N/A**
1. I have reported the species, strain, weight, sex and age of animals		
2. For experiments involving live vertebrates: I have either ticked to indicate that the necessary protocols have been followed in the Author Disclosure form or I have included a statement of compliance with ethical regulations and identified the committee(s) approving the experiments in my paper		

† We recommend consulting the ARRIVE guidelines to ensure that other relevant aspects of animal studies are adequately reported.

Human Studies†‡	**Yes – information is located on page/paragraph/line:**	**N/A**

1. I have identified the committee(s) approving the study protocol		
2. I have included a statement confirming that informed consent was obtained from all subjects/ indicated that this is the case in the Author Disclosure form		
3. I have reported the clinical trial registration number (at ClinicalTrials.gov or equivalent)		

† For Phase II and III randomized controlled trials, we recommend that you refer to the CONSORT statement.
‡For tumor marker prognostic studies, we recommend that you follow the REMARK reporting guidelines.

Data and material sharing†	**Yes – information is located on page/paragraph/line:**	**N/A**
1. I have stipulated in the manuscript that all datasets on which the conclusions of the report rely are available on request		
2. I have provided accession codes for data that has been deposited in public repositories		
3. If software has been used in the study: I have included information about the type of software and a statement describing if the software is available and how it may be obtained		

†We encourage the deposition of data to a discipline-specific, community-recognized repository where one exists, or a generalist repository if no suitable specific resource is available. Repositories can be found via sites such as re3data.org.

Health economic evaluations	**Yes, see separate checklist:**	**N/A**
1. I have followed the separate CHEERS† checklist, available here.		

† Husereau D, Drummond M, Petrou S *et al*., on behalf of the CHEERS Task Force. Consolidated Health Economic Evaluation Reporting Standards (CHEERS) statement. *BMJ* 346, f1049 (2013).

Observational studies	**Yes, see separate checklist:**	**N/A**
1. I have followed the separate STROBE† checklist, available here.		

† von Elm E, Altman DG, Egger M, Pocock SJ, Gotzsche PC, Vandenbroucke JP. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) Statement: guidelines for reporting observational studies. BMJ. 335(7624), 806–808 (2007).