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WORDS OF ADVICE

How to write a good scientific review article

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Introduction

In addition to writing up research papers, writing review articles is a useful skill to develop early on in your career as a scientist, whether pursuing an academic career path or not. In any field of science, it's important to read widely to keep up to date with the latest developments, and writing a review article encourages you to critically evaluate the strengths and weaknesses of the literature to extract the most pertinent information. The process of sifting through research papers and distilling their key messages into one narrative can provide great inspiration for your own work. Writing a review also enhances your publication record and highlights your in-depth knowledge of a research area, providing a platform for you to give your own perspectives on recent advances and the future trajectory of a particular research question. A review that provides a comprehensive, balanced and engaging overview of a topic is a valuable resource that can often be highly accessed and cited even years after publication [1], but it takes time and plenty of practice to develop the art of writing such an article. Here, I provide tips on planning and writing a review article, with examples of well-crafted review articles published in *The FEBS Journal*. The advice given here is mostly relevant for the writing of a traditional literature-based review rather than other forms of review such as a systematic review or meta-analysis, which have their own criteria and guidelines [2,3].

Plan, plan, plan

A good review article requires careful planning. Rather than diving deep into the writing, it's best to take time to think about what and how you will write and to draw up an outline of the text and graphics. It commonly takes a few months to get to the stage of having a complete first draft for submission and you should work backwards from your deadline to ensure that you're allowing plenty of time for planning the review article and researching the topic, as well as for writing and editing the article. Before you get started, recruit any co-authors—usually members of your lab or collaborators—and make yourself aware of each author's schedule and the time they are able to devote to the review article. Once you have collectively worked through the steps outlined below as part of the planning process, you can decide how to divvy up the core tasks; for example, different authors could take on different subtopics addressed in the article, or one author might be wholly responsible for generating the figures. As with all scientific articles, defining the author list and individual contributions is important to do as early as possible to avoid conflict and confusion later on [4].

Scope

A key step of the planning stage is to pinpoint what the scientific focus of the review article will be. In most cases, you will have been invited by a journal to write the review and they are likely to have asked you to write on a specific topic within your field of expertise. However, sometimes the invitation is more open-ended or you wish to propose the review article to a particular journal; in such cases, you will need to clearly define the topic. There are several factors to consider when doing this (Fig. 1). First, the topic of the review should be tailored to fit the scope of the journal you are aiming to publish the article in. For example, a clinical journal might expect you to highlight the relevance of a set of findings to human health, whereas a cell biology journal might expect you to discuss the same research studies at the molecular, mechanistic level. Similarly, a technical review is likely to be more focused on techniques and methodology than biological significance. The target audience and goals of the article should be considered carefully. Second, it's crucial to stay (largely) within your comfort zone when defining the scope of a review article. To be able to provide an authoritative take on a topic, it should generally be an area of research that you have been working deeply within for at least a couple of years, including having published research papers in the field and/or presented relevant work at conferences. This shouldn't preclude early career researchers from writing review articles, with the mentorship of experienced colleagues—gaining experience in writing review articles early on in your career is a great way to hone your analytical and writing skills. But, whether you're

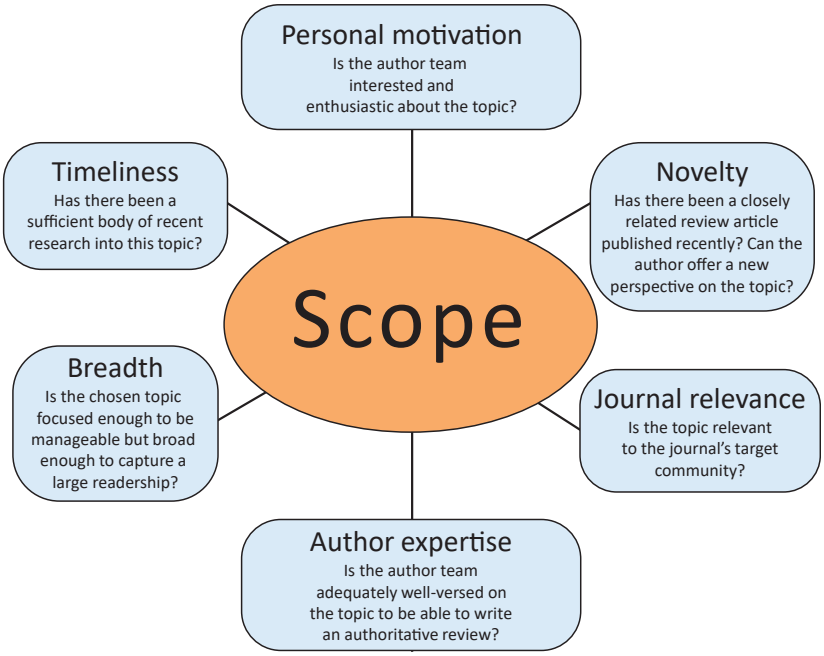


Fig. 1. Defining the scope of a scientific literature review. A summary of key factors that authors should consider when pinpointing the scientific focus of a review article.

in the early or late stage of your research career, if you're asked by a journal to write on a topic that you don't feel qualified to discuss in depth, it's best to decline the invitation or suggest a topic that is more closely linked to your current research focus.

Next, consider whether the review topic is worth writing about at the present time. Has a closely related review article been published in the past 1–2 years? If so, it might be too soon for an update unless you can review the same body of research from a different perspective. Can you easily identify at least 15–20 research papers relevant to the topic, published within the last ~ 5 years? If not, the body of available research might not yet be mature enough to warrant writing a review article. Finally, ensure that your topic of choice is sufficiently focused. A common mistake made by inexperienced authors is that they are too ambitious in what they aim to cover and then rapidly run out of steam during what ends up being a mammoth writing task. This can mean that some aspects of the topic are covered far too superficially to be useful for readers. Remember that a review article isn't a thesis or textbook, and that research can advance quickly: pick a theme that can be broken up easily into manageable chunks of writing, rather than striving to cover 50 years of research. Finally, make sure that you're sufficiently interested and enthusiastic about the topic that you choose to review, as otherwise, you'll find the process to be unnecessarily tedious. In addition to the other positives, writing a review article should ideally be fun!

Structure

Once you've pinned down the scientific content of the review, it's time to define the structure of the article. During the writing process, the outline you've drawn up is likely to be refined with additional subheadings as you incorporate details on the topic, but it's good to have a broad framework to work with at the outset, and many journals request this ahead of a first draft. We recommend that, in addition to a title and abstract, all review articles include a general introduction to the topic, a main section that discusses the core topic in depth, with subheadings to demarcate subtopics, and a concluding section that summarises the take-home messages of the article and key future perspectives (Table 1). Almost without exception, review articles should incorporate display items (e.g. figures, tables and boxes) and references, which are discussed in more detail below. Auxiliary sections that support the reader's understanding of the review, such as keywords and glossaries, are also useful to include, and author contributions and any conflicts of interest should be clearly outlined, usually in dedicated sections of the review.

When drawing up an initial outline, consider any unique features of the article type that you're developing and always refer to the journal's guidelines on word, page and reference limits. Most review articles are between 4000 and 6000 words in length and as a rule of thumb, 80–90% of the text should be within the main section/devoted to the core topic—make sure

Table 1. Core components of a typical review article.

Name of section	Typical number of words	Aims, content and format
Title	7–12 words	Should succinctly describe the scope of the review in a clear, accessible and engaging way. The title should be a single, standalone sentence that might be separated into two parts with a colon or hyphen. Abbreviations should be avoided in titles unless they are very common and don't need defining e.g. DNA.
Abstract	150–200 words	Briefly outlines the background of the topic and highlights what makes it timely and worth reviewing, and summarises the specific goals or key messages of the review. The Abstract of a review article is typically structured as a single paragraph and doesn't include references. Abbreviations and heavy jargon should be kept to a minimum, but do include keywords that will optimise searchability.
Introduction	300–500 words	Provides more detailed background/contextual information to introduce the topic, including a basic description of key themes, terms and processes that will aid understanding of the rest of the article. The Introduction should also define the aims and scope of the article and briefly outline which subtopics will be discussed. This section should be written as continuous prose and should be supported with references, and figures (or other display items) if appropriate. Specific research findings would not usually be discussed in significant depth in the Introduction.
Main text	3500–5000 words	The central part of the review, which is usually divided into several subsections with appropriate topic-specific headings, should provide a detailed discussion of research findings relevant to the overall topic, with an adequate description of the methodologies, results and conclusions of individual research papers. Related research papers should be discussed together/under the same subheading, and these links should be made clear to readers to form a coherent narrative. Throughout, the significance of research findings in the broader context of the research topic being reviewed should be highlighted, and the author should aim to critically appraise the strengths and weaknesses of individual papers rather than just laying out facts. All subsections should be independently introduced and concluded, and the text should be fully supported with references. Care should be taken to cite the original article reporting a specific finding and the overall discussion should be balanced. Figures, tables and other display items should be used to aid understanding and break up long sections of text.
Conclusions	350–500 words	Rounds up the article by providing a summary of central themes and take-home messages. Can also provide the author's perspectives on future research in the field, key challenges and outstanding questions. Usually written as continuous prose but a bulleted list could be used to emphasise key points. Supporting references might be included.
References/ bibliography	No word limits but a typical review article has 150–200 references	This section lists all references cited in the review article text or its figures and tables. The references should be formatted according to journal style guidelines.

that your outline reflects this. I also recommend that you note down some of the key references that you'll discuss under each subheading to help focus your writing and determine how best to link each subtopic to the next. This brings me to arguably the most important aspect of writing a review article: the literature analysis.

Read, read, read

When you begin the process of developing a review, you're likely to have a good idea of what you'll cover and what the seminal papers in the field are. Nonetheless, it's recommended that you start by reading far and wide to ensure that you are as up to date as possible on the history and recent advances within the field. This isn't an easy task, particularly if you work in an area of science that has a large research community attached to it and is exceptionally prolific. Even if you work in a more specialised field, being aware of every single paper can be challenging in this era of fast online journal publication, and that's without factoring in preprints, book chapters and news articles that you might also wish to keep abreast of. Fortunately, there are several search engines/citation databases that can be used to help you find the most relevant references, including PubMed, Google Scholar, Web of Science and Scopus. For preprints, bioRxiv and other preprint servers are widely used, as well as Twitter! Some of the available tools are summarised in Table 2; it's worth trying out a few to determine which suits you

Table 2. Examples of search engines and databases for scientific references and preprints.

Name of search tool	Homepage URL	General features
PubMed	https://pubmed.ncbi.nlm.nih.gov/	A free search engine that mainly accesses the MEDLINE database of references and abstracts in biomedical and life sciences. Maintained by the U.S. National Institutes of Health's National Library of Medicine (NIH/NLM). Distinct from PubMed Central, which is a repository of open-access full-text scholarly articles.
Google Scholar	https://scholar.google.com/	A free search engine that indexes the full text or metadata of scholarly literature, including peer-reviewed online academic journals and books, conference papers, theses and dissertations, preprints and more. Owned by Google.
Web of Science (WoS)	https://www.webofknowledge.com/	A paid-access platform that gives access to multiple databases hosting reference and citation data from academic journals and conference proceedings across multiple disciplines. Owned by Clarivate.
Scopus	https://www.scopus.com/	A paid-access abstract and citation database covering titles—mainly peer-reviewed journals—from a large number of publishers within the life, social, physical and health sciences. Owned by Elsevier.
CORE (Connecting Repositories)	https://core.ac.uk/	An aggregator of open-access content from different systems. All content can be accessed and downloaded free of cost and has limited reuse restrictions. Provided by the Knowledge Media Institute based at the Open University, UK.
Europe PMC	http://europepmc.org/	A free repository of open-access full-text biomedical and life sciences research articles. Includes citation information and text-mining tools that link to external molecular and medical databases. The content mirrors that of PubMed Central. Europe PMC is managed by the European Molecular Biology Laboratory-European Bioinformatics Institute (EMBL-EBI).
Science.gov	https://science.gov/	A free, specialised search engine that provides access to the United States government science and technical information and research. Owned by the US government.
bioRxiv	https://www.biorxiv.org	A freely available repository of preprints (papers that have not been peer-reviewed and have undergone only basic checks) within the biological sciences. Its sister site, medRxiv, hosts preprints within the medical sciences. Owned by Cold Spring Harbor Laboratory.

best. Moreover, for more specialist review articles, there are subject-specific databases that you might use; for example, MEDLINE, Embase and the Cochrane Library are often used for systematic reviews and meta-analyses, and subscription-based R&D intelligence providers are used for literature mining in the pharmaceutical industry. Finally, it's worth subscribing to your favourite publisher or journal's content and news alerts to keep on top of new research papers in your specialist area(s).

Identifying the most important references is a somewhat subjective process, but many researchers use article-level metrics to pinpoint the key papers in a research area [5]. As you retrieve and read relevant references, list them in your outline under the appropriate subheading and make notes to keep track of key findings, strengths, weaknesses, controversies and quotes that might be included in your review. Although the reference list supporting an article is usually positioned at the very end, this section should never be considered an afterthought and you should build your bibliography as you work. There are many reference management tools available to assist in organising references, ranging from freely available tools such as Zotero to commercial software such as Endnote. A handful of these is described in Table 3, and readers are referred elsewhere for a more comprehensive comparison (https://en.wikipedia.org/wiki/Comparison_of_reference_management_software).

Although it's sensible to do as much reading as possible in advance of writing so that the scope and structure can be tweaked if necessary, ensure that you revisit and update your bibliography throughout the review-writing process. The easiest way to keep on top of new papers emerging in the research field is to set up alerts using relevant search terms, so that the information will routinely come into your inbox. Discuss the literature frequently with your author team/colleagues and add their suggestions to the bibliography too—several reference management tools enable sharing of libraries across multiple users. While a typical review article includes 100–200 references, it's worth

Table 3. Examples of reference management tools.

Name of reference management system	Website	General description
EndNote	https://endnote.com/	A commercial reference management software that groups citations into 'libraries' with the file extension *.enl and assigns a corresponding *.data folder. Users can manually add references to their Endnote libraries or export them directly from external platforms. Currently owned by Clarivate.
Mendeley	https://www.mendeley.com/reference-management/reference-manager	A free web and desktop reference management application that enables users to store, organise and search references from a single library and read, highlight and annotate PDFs. Can be used with citation tool plug-ins for integration with Microsoft Word and other word processors. Online free storage capacity is 2 GB. Currently owned by Elsevier.
Zotero	https://www.zotero.org/	A free and open-source reference management software with the following key features: web browser integration, online syncing, generation of in-text citations, footnotes, bibliographies and integration with word processors. Developed by the non-profit Corporation for Digital Scholarship.
ReadCube (renamed as Papers)	https://www.papersapp.com/	A commercial cross-platform suite of reference management and discovery tools that has built-in search engines, provides personalised recommendations and related article feeds, and facilitates importing, reading and annotating of PDFs.
Sciwheel	https://sciwheel.com/	A commercial online reference manager with a free basic plan that offers unlimited reference storage, the option of finding and citing references in Microsoft Word and Google Docs, access to references from any device.
RefWorks	https://about.proquest.com/en/products-services/refworks/	Accessed usually through institutional subscription, this web-based commercial reference management software allows users to find, access, save and organise references from multiple sources and in any format. Also generates citations and bibliographies. Produced by Ex Libris, a ProQuest company.
JabRef	https://github.com/JabRef/jabref	A free, open-source, cross-platform citation and reference management tool, allowing users to collect, organise and cite literature references. It uses BibTeX as its native file format and so is used commonly with LaTeX. Actively developed by the JabRef team.

investing time in building your own comprehensive database of references, as this could also be used for future writing projects.

Think visually

The phrase 'a picture is worth a thousand words' is more important than ever in the writing of a review article. Figures can be invaluable as a means of concisely summarising key concepts and making the content accessible to nonspecialist readers, as well as to readers within the field—a fundamental goal of a review article. Figures break up long sections of text to make the content more engaging and easier to assimilate, with the added benefit of helping you to stay within the word limit. With many journals removing colour charges and increasingly promoting author-provided figures on social media and across journal pages, there is a lot to be gained from developing informative and visually appealing figures. So, although it may be tempting to cobble your figures together at the end, they are such a fundamental part of the article that it's worth taking the time to carefully plan their content and design.

Generating figures

Depending on the specific purpose, illustrations, photos, cartoons, infographics, diagrams, graphs or other types of charts can be produced as figures in a review article. Original data images from primary research papers, such as Western blots and immunofluorescence images, are generally not appropriate for inclusion in reviews. Instead, opt for a schematic where possible, as these are particularly effective for the visual representation of a common theme or process stemming from several different threads of research. You need not be an artist to generate an effective schematic; invest time in familiarising yourself with software for generating scientific illustrations, such as Adobe Illustrator, InkScape or BioRender [6] (there are many others, both paid and free options; a handful are summarised in Table 4) and in planning figure content and layout. Does the information flow logically between different panels of the figure? Are all components in the figure visible and is any associated text legible? Can the key message of the figure be understood independently of the main text? The latter is particularly important as readers often jump straight to the figures

Table 4. Commonly used tools and software for the generation of scientific illustrations.

Name	Homepage URL	General description
Adobe Illustrator	https://www.adobe.com/uk/products/illustrator.html	A commercial graphic design software that is widely used for creating and editing vector graphics[a]. Developed and marketed by Adobe Inc.
BioRender	https://biorender.com/	A commercial web-based application that enables users to generate scientific illustrations using pre-drawn icons (relevant to 30+ life sciences fields) that can be dragged and dropped into the diagram. Pre-made templates are available or users can create their own.
Inkscape	https://inkscape.org/	A free and open-source vector graphics editor, compatible with multiple systems, which is used to create and edit vector images[a]. Mainly utilises the Scalable Vector Graphics (SVG) format, but other file formats can be imported. Inkscape is being actively developed on GitLab by multiple contributors.
Microsoft Powerpoint	https://www.microsoft.com/en-us/microsoft-365/powerpoint	A presentation program that is often repurposed as design software. Objects, shapes, icons and the SmartArt tool can be used to make basic illustrations that can be saved as image files. Part of the Microsoft Office suite to which many researchers have access through an institutional subscription.
VectorStock	https://www.vectorstock.com	A commercial vector-only image marketplace that includes images relevant to science and healthcare. Free vectors are available for limited use, with attribution being required.
Canva	www.canva.com	An online graphic design tool with templates for users to create infographics, illustrations and posters. Free to use but has a paid option with a larger library of images.
Vectr	https://vectr.com/	A free web-based graphics editor used to create vector graphics[a]. Designed to be relatively easy and intuitive to use.

[a]Vector graphics are images in which lines, curves, shapes and colours are mathematically defined. These images can be resized without affecting image quality.

when browsing a review article—make sure that they stand out and encapsulate the overall narrative of your review. Although a comprehensive guide to producing a good schematic is beyond the scope of this article, some key tips are listed in Box 1. Moreover, two published examples of eye-catching and scientifically informative schematics are presented in Fig. 2. Much of the advice given for the generation of figures for original research articles [7,8] or for scientific posters [9] will also apply for review article figures.

Remember that figures may not always be the most effective means of representing information, and you should make use of tables, text boxes and videos as appropriate. In fact, using a variety of display items can help to engage the audience and drive a point home. Aim to distribute your display items fairly evenly across the review article, citing them sequentially in numerical order. A typical review article with $\sim$ 6000 words would usually include at least four different display items.

Copyright and attribution

It's important to consider copyright permission when reusing content (often figures) from another published source in your review article. While in the planning stage and conducting your literature analysis, consider which figures you will include and decide whether they will be generated *de novo* or adapted or reproduced from existing sources. Take note of the figures in published articles that you would like to reuse or use as inspiration, as you *must* cite the source(s) in your own article. The responsibility of obtaining copyright permission where necessary, including covering any associated fees, usually lies with the authors. Navigating copyright permissions can be a time-consuming minefield, so start the process as early as possible and ask for advice from journal editors if needed. Figure 3 summarises the scenarios in which you're likely and unlikely to need to seek permission for figures. Many publishers use the Right-Link service to make it as easy as possible to obtain a license to reuse content.

Draft, draft, draft

Having planned your review article meticulously, from scope to references to figures, the actual writing part should be relatively easy! As mentioned earlier, the writing could be divided amongst authors, with each author taking on a distinct subtopic or section of the article, or one author might take the lead on writing with input from others. Bear in mind that with a multiple author team, a key challenge is to ensure a relatively consistent style of writing throughout. Thus, one

Box 1. Tips for generating illustrative figures for review articles.

Content and accessibility

- Keep the content relatively simple
- In figures with a multi-stage process, consider using arrows and numbers to help the reader to navigate the figure
- Add labels and scale bars as required to aid in understanding
- Provide a detailed figure legend that walks readers through the figure: all colour codes, symbols, abbreviations and specialist terms should be explained. Including a key in the figure may further enhance clarity
- Figures should normally flow from left to right and/or up to down
- Ensure scientific accuracy throughout, even if this somewhat compromises the visual effect. A review article is ultimately an educational tool and should not be misleading

Format and style

- Consult the target journal's guidelines on optimum font size and type and ensure that you use the same font consistently within and across figures
- Use different colours and shading to support understanding and make the figure more eye-catching, but use a colour-blind friendly palette if possible. Don't overdo it with contrasting colours, as this can be distracting. Review the image in grayscale to ensure that foreground items are still visible against the background
- Avoid cramming the figure with too many components. Leave ample white space around each element
- Use light, neutral colours in the background
- Ensure that all panels in a figure are neatly aligned

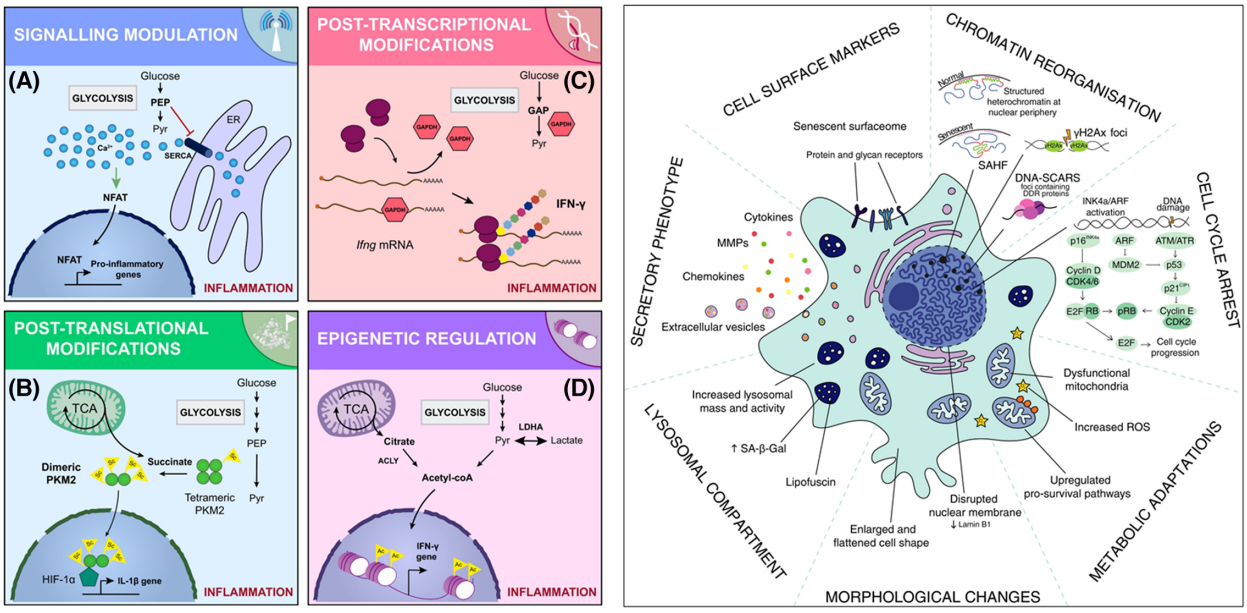


Fig. 2. Examples of effective schematic figures in review articles. Left-hand panel: A representation of the molecular mechanisms underpinning the metabolic control of the proinflammatory phenotype, reproduced with permission from a review article on the role of glycolytic metabolism in the inflammatory response, by Soto-Heredero et al. [10] (CC BY-NC-ND 4.0). Right-hand panel: A representation of the hallmarks of cellular senescence, reproduced from a review article on assessing cellular senescence *in vitro* and *in vivo*, by González-Gualda et al. [11] (CC BY 4.0).

author should be nominated to comb through the final draft to modify any obvious discrepancies in style, e.g. a midway switch from using UK spelling to US spelling. Whichever way you coordinate the writing, it's common to go through several iterations of the article before the article is ready for submission to the target journal. As with any writing project, don't strive to finalise the text in one go, but take breaks and then return to the sections you've drafted already with fresh eyes. All writers have their own unique style and there is no single formula that can be followed to write effectively. However, there are a few key considerations that can guide successful review-writing.

Introduce the topic

Firstly, always provide an overall introduction to the topic of your review, with adequate background and context to highlight why the topic is important, timely and worth reflecting on. Any specific goals of your article, such as to discuss the evidence in favour of a particular model or mechanism, should be outlined in your introductory section. This will lead to your in-depth discussion of the topic in the main section of the article.

Avoid the laundry list

No matter how much ground you need to cover, don't be tempted to write a review in the style of a laundry list, with different sets of findings briefly described with minimal links, discussion and interpretation. This can be repetitive, dull and ineffective at driving a central point home to readers [12]. The laundry list style can be avoided by consistently explaining the context and broader implications of a body of research in a way that underlines how it has advanced the field and also brings to light the gaps in current knowledge, rather than merely regurgitating the facts. To achieve this, you may need to be somewhat selective when choosing which references to discuss, as summarising all relevant research in a meaningful way may not be possible. Remember that a good review article stimulates further discussion and inspiration, as well as informing readers on what's currently known about a topic.

Be balanced

Importantly, you should ensure that you are providing a balanced overview of the available research, even if you eventually build up to taking a particular viewpoint. It's challenging—and usually unnecessary—to produce a review article that comprehensively summarises a field, but you should nonetheless strive to discuss all pertinent findings relevant to the topic, even if you disagree with the conclusions and take an opposing view. In line with this, don't be tempted to only discuss and cite your own lab's research—this can put readers and peer reviewers off and diminish the overall authority of the article.

Cite, cite, cite

Unless it's a particularly well-established or historic piece of information (e.g. 'Alzheimer's disease is a neurodegenerative disorder'), most of the fact-based statements in your review article should be supported by citing an appropriate source. When describing a piece of research, ensure that there's no ambiguity in who performed the work and, in general, aim to cite the original research paper rather than a review article that subsequently discussed the work. This accurately assigns credit and avoids misleading the readers on the history of the discovery [13].

Be original

It's natural to be influenced by the words and ideas of other authors when writing your own review article. Although this is fine—good science doesn't mean constantly reinventing the wheel, and being inspired by others enhances your own research and writing skills—take care not to be overinfluenced to the point that you inadvertently plagiarise other authors' work. It can be tempting to copy a beautifully worded description from elsewhere when it's not easy to improve on it, but text recycling, including from your own previously published papers, is considered to be poor practice and should be avoided. Most publishers now rely on an integrated plagiarism detection software such as iThenticate to screen manuscript texts at submission [8]. There may be free alternatives available for individual use (https://alternativeto.net/software/ithenticate/?license=free), so you can check how closely your text matches other publications. There is also the option of using online translation tools or relying on professional translation if you're a non-native speaker of English and wish to write some of the text in your native language first. If you do need to reuse selected text from elsewhere, include quotation marks and of course, cite the original source.

Be reader-friendly

Another key point to keep in mind when writing a review article is that the content should be largely accessible to newcomers to the field. Thus, it's

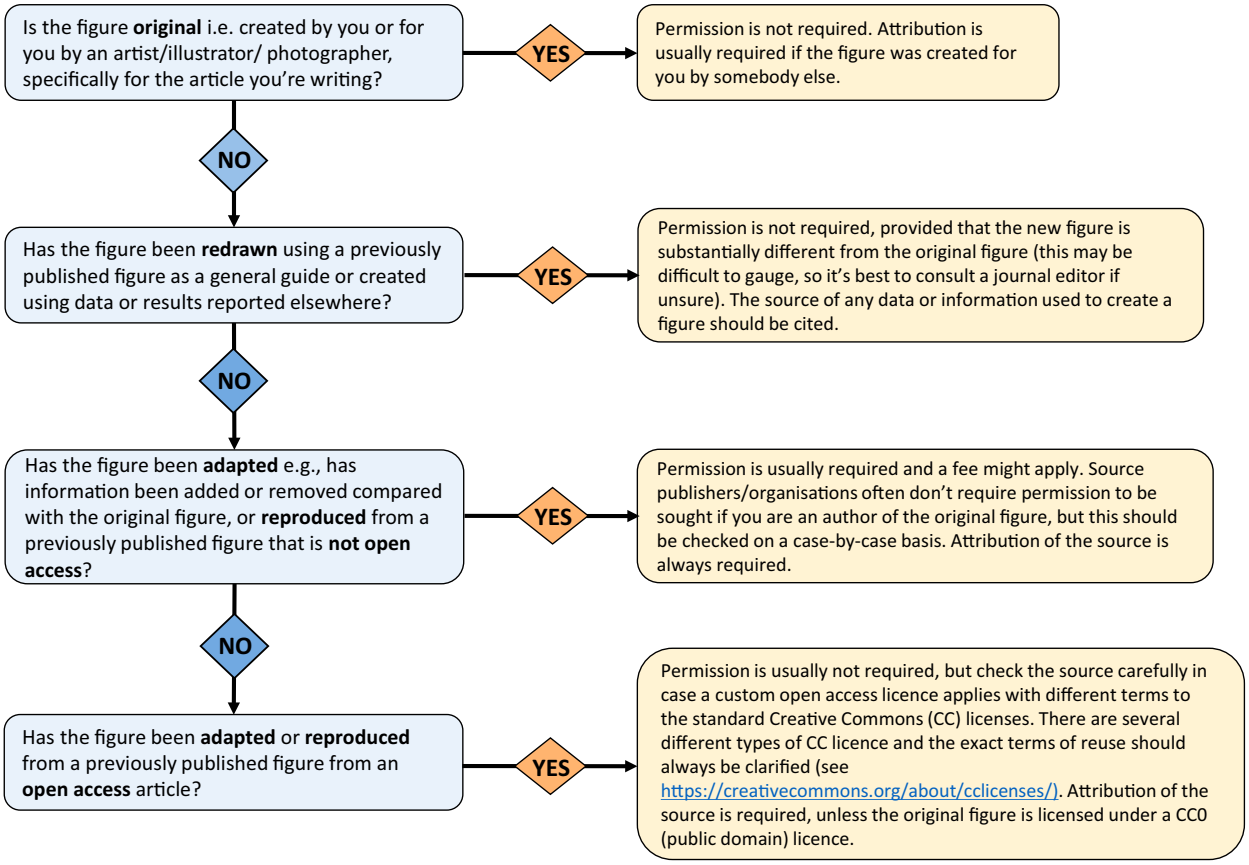


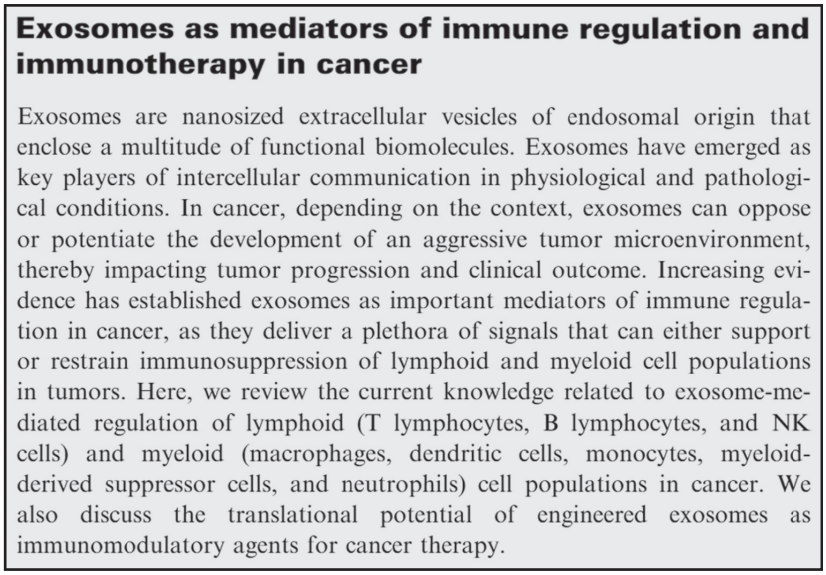
Fig. 3. Copyright permission. Scenarios in which copyright permission is or isn't required for publication of a figure (or other material) in a scientific article. For any form of non-original figure (redrawn, adapted, reproduced or provided by somebody other than the author(s)), attribution of the original source is necessary.

important to explain all specialist terminology and define any uncommon or ambiguous abbreviations. On a related note, don't assume that readers know exactly what links two pieces of research or, for example, why you've moved from one theme to another: always explain, as it's easy as an expert to forget that nonspecialists may not immediately form the same connections and reach the same conclusions that you do. Use clear, precise and concise language throughout, avoiding overly long or rambling sentences. Scientists from all over the world may pick up your review article, and language shouldn't be a barrier.

Allow time for your title and abstract

As emphasised for research papers [8], authors should devote time and effort to the title and abstract of a review article. As the gateway to your article, the title is extremely important. While titles for research articles should simply and succinctly describe the work performed, you have more creative licence with the title of a review article and you can include some wordplay or, for example, pose a question to help attract the attention of readers. Nonetheless, the title should still accurately convey the scope of the review article and be clear and concise. Your global audience should again be considered when coming up with a title. Avoid including a pun that would be understood only by a specific community, e.g. by referencing popular culture.

The abstract is equally important and the same basic principles for the writing of a research article abstract [14] will apply, but instead of outlining your experimental approach, results and conclusions, focus on highlighting what the topic is and why it's important and interesting. It can be helpful to wait until you have a complete draft of your article before writing the title and abstract, as you'll then know exactly what the strongest, most unique elements of your article are, and can emphasise these. Don't forget to include keywords that will promote the searchability of your review! A published example of a strong title and abstract is shown in Fig. 4.



Exosomes as mediators of immune regulation and immunotherapy in cancer

Exosomes are nanosized extracellular vesicles of endosomal origin that enclose a multitude of functional biomolecules. Exosomes have emerged as key players of intercellular communication in physiological and pathological conditions. In cancer, depending on the context, exosomes can oppose or potentiate the development of an aggressive tumor microenvironment, thereby impacting tumor progression and clinical outcome. Increasing evidence has established exosomes as important mediators of immune regulation in cancer, as they deliver a plethora of signals that can either support or restrain immunosuppression of lymphoid and myeloid cell populations in tumors. Here, we review the current knowledge related to exosome-mediated regulation of lymphoid (T lymphocytes, B lymphocytes, and NK cells) and myeloid (macrophages, dendritic cells, monocytes, myeloid-derived suppressor cells, and neutrophils) cell populations in cancer. We also discuss the translational potential of engineered exosomes as immunomodulatory agents for cancer therapy.

Fig. 4. Example of a good title and abstract for a review article. Screenshot of the title and abstract of a review article published by Fernanda G. Kugeratski and Raghu Kalluri, in *The FEBS Journal* [15]. The title and abstract succinctly and clearly encapsulate the aims and scope of the article and the length, format and style align with standard journal guidelines. Reproduced with permission from [15].

A grand finale

Last but not least, round up your article with a concluding section that summarises the main take-home message(s) of the article and discusses future opportunities and challenges. Highlight the broader significance of your conclusions and suggest ways in which further insights could be gained or outstanding questions could be addressed. In contrast to the discussion of a research paper, the concluding section of a review article can be relatively speculative, so feel free to voice your own views. You want the reader to finish your article with a head buzzing with questions and ideas.

Gain feedback and finalise

Once you and your co-authors are satisfied with your first complete draft, it's a good idea to ask colleagues, including those who don't work in your field, to read through and give you honest and constructive feedback. This can help you to optimise the content, clarity and accessibility of your article. If English isn't your first language, it can be helpful to recruit a native speaker to read the article and make minor language edits, if needed.

After submission, your review article will be sent out for review by at least two experts in the field, and they will assess the scientific content and accuracy of the article in addition to the writing style, figures and structure. Although the peer-review process is not usually as rigorous as for a research article [16], there are some common features; for example, reviewers will consider whether the article cites the most relevant work in support of its analysis and conclusions. Journal editors will also carefully read the first draft and, depending on the journal, developmentally edit it. Unlike copyediting, developmental editing is a form of substantive writing support where the editor will consider any restructuring, rewriting, expansion or reduction in the text, as well as amendment of figures, to optimise relevance, clarity, style and impact. Editors will think about the big picture when working through a review article, but will also pick up on sentence-level issues such as insufficient citation of sources or ambiguity in expression. Editorial changes will always be implemented with the agreement of the author, and it's common to engage in some back and forth during the process. Of course, the comments of peer reviewers will be taken into account by editors, and you should be open to revising the review article in accordance with the overall guidance, while maintaining your own voice and style.

In summary, writing a review article requires substantial planning and research to draft, revise and refine the final product. Undoubtedly, a significant investment of time and effort is needed to produce a good review, but these labours pay dividends when you have the satisfaction of knowing that your perspective on a research topic has informed and influenced thousands of readers worldwide.

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