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# Pharmacological Research

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## Editorial

### Writing it right for *Pharmacological Research*



The title, keywords, and abstract are used by indexers to classify manuscripts and these components of a paper should be formulated with the goal of attracting the relevant and maximal readership through the use of search algorithms such as PubMed and Google Scholar.

The fourth edition of *The Elements of Style* by William Strunk Jr. and E.B. White has many recommendations for writing with a design that is easily understood [1]. Professor Strunk wrote that the reader is in considerable trouble most of the time and it is the obligation of the writer to help the reader. And we have it from Francis Crick that “There is no form of prose more difficult to understand and more tedious to read than the average scientific paper.”

The following is a list of some rules of thumb in creating an article for *Pharmacological Research*.

- Read the journal’s Guidelines for Authors ([https://www.elsevier.com/wps/find/journaldescription.cws\\_home/622931?genrepdf=true](https://www.elsevier.com/wps/find/journaldescription.cws_home/622931?genrepdf=true)) before writing and make a checklist before submitting the paper to make sure that all criteria are fulfilled.
- The title should convey the important points of the study.
- The title should be (i) concise, (ii) informative, (iii) intelligible to readers who are not specialists in the field, and (iv) jargon-free.
- The title from the most cited publications contains from 10 to 15 words or 31–41 characters [2].
- The title is used by indexers to categorize an article and it thus serves a keyword [3].
- The abstract (250 words maximum) should describe the purpose of the research, the major findings, and conclusions.
- Avoid esoteric terms in the abstract.
- Minimize the use of non-standard abbreviations throughout the paper. They slow down the reader who must mentally translate each abbreviation before proceeding while disrupting the reader’s train of thought. On the other hand, standard abbreviations (DNA, RNA, ATP) do not have to be mentally translated.
- Avoid abbreviations for phrases that are not onerous (e.g., do not use AD for Alzheimer Disease).
- Use abbreviations only for long phrases (e.g., use PDGFR for platelet-derived growth factor receptor).
- Use keywords that focus on the subject matter.
- *Pharmacological Research* limits the number of keywords to six and it is best to use all six keywords to increase the potential readership. Because the title is a keyword, avoid duplicating parts of the title in the list of keywords to maximize the number of keywords.
- Keywords should not be too expansive or too selective. The term “cancer,” for example, might be replaced by “breast cancer” or “cancer chemotherapy” to better target the subject matter. Similarly, “lung disease” may be too broad when “chronic obstructive lung disease” or “asthma” is closer to the point.
- Include the names of up to 10 chemical compounds along with their PubChem CID that occur in the article. These chemical names are used as keywords and will help to attract readers. If there are more than 10 chemicals described in a paper, choose the most relevant and important chemicals/drugs found in the paper. If “methotrexate” is in the list of chemical compounds, it is unnecessary to include it in the list of keywords.
- The introduction should state the reasons and objectives for conducting the study and provide references to the pertinent background literature.
- The methods section should describe how the experiments were performed with enough detail so that the same study could be performed in another laboratory. Oftentimes other groups will replicate the experiments as an entryway to explore and extend wider research objectives.
- Results should be presented clearly and succinctly, usually with the aid of tables and figures.
- Tables and figures should be self-explanatory and fully understood without reading the text.
- The titles to tables and figures should accurately convey their contents.
- The text should emphasize the main points contained within the tables and figures.
- Results should be presented objectively without interpretation while interpretations are reserved for the discussion section.
- Choose references and citations carefully as many readers consult them to gain additional scientific insight.
- If several references can be used to validate a statement or finding, select the ones available through open access and those that are most recent [4].
- Make sure that the reference title matches that of the original publication. The reference citation in PubMed may state beta, while the original publication has the Greek  $\beta$ . Also follow the original paper’s use (or non-use) of italics for *in vitro* (in vitro), *in vivo* (in vivo), or for a gene name such as *PDGFRA* (PDGFR).
- Avoid the use of intricate or complex sentence structures.
- Avoid monotonous presentations and write with variety to keep the reader’s interest.

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- The writer should proof each paper in two independent ways. First, check for grammar (subject verb agreement, and so forth). Second, check for accuracy (is the dose 5 mg or 50 mg).
- It is common for the writer to mentally fill in non-existent words while reading and proofing a paper. These gaps can often be identified by reading the paper aloud.
- If you are the sole author, it is advantageous to have others read your article prior to submission. Such critiques can highlight deficiencies, errors, and weaknesses that can be addressed to improve the presentation.
- The first sentence in a paragraph is the topic sentence. Read each topic sentence sequentially from the beginning of the paper to the end to ensure that the flow of ideas makes sense.
- The graphical abstract should summarize the contents of the article in a concise, pictorial form designed to capture the attention of a wide readership online.
- Adopt the Goldilocks rule for each component of the paper: not too long or too short; not too much or too little.
- Strunk devotes a special paragraph to the “vile” expression “the fact that,” an expression that should be “revised out of every sentence in which it occurs” [1].
- Revise, revise, revise. In the first half of the 20<sup>th</sup> century and before the advent of word processors, Otto Warburg – the eminent biochemist, cell physiologist, and Nobel Laureate (1931) – stated that he rewrote his papers up to 16 times [5].

E.B. White wrote that “Vigorous writing is concise. A sentence should contain no unnecessary words, a paragraph no unnecessary sentences, for the same reason that a drawing should have no unnecessary lines and a machine no unnecessary parts. This requires not that the writer make

all sentences short or avoid all detail and treat subjects only in outline, but that every word tell” [1].

#### Conflict of interest

The author previously served on the Editorial Board of *Pharmacological Research*. Otherwise, there is no conflict of interest.

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