Article Title [*110 characters or less*]*

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ABSTRACT

200 words or less, one paragraph

A short summary of the manuscript. It should include:

- *The problem that prompted the study or why the study is valuable*
- *The research question/purpose of the study*
- *Main hypothesis*
- *Summary of results with a very brief overview of the methods for context*
- *Conclusions of the work and implications of the findings*

**The title must be succinct and informative of the research. It should have no more than 110 characters (including spaces). It should be written in sentence case, with only the first word and proper nouns capitalised. A suggestion is that your title should paraphrase your research question or your main results.*

INTRODUCTION

The Introduction should follow a "funnel" format where you start off broad and get more specific as you go down the text with each paragraph. The narrative should lead the reader towards your research question, your aim and your main scientific hypothesis. Please note that the hypothesis should not refer to the null/alternative hypothesis, but rather your scientific hypothesis.

Your introduction should:

- *Describe the overarching scientific topic of the manuscript*
- *Provide background on the scientific question so the readers understand why the question is being asked AND why the question is of interest*
- *Inform the reader about any gaps in the literature that you aimed to address or the overall justification of your research.*
- *Have references as in-text citations throughout following the APA style. Each of these should also appear as a full citation in the reference list at the end of the manuscript. Every claim that is not considered "common knowledge", must have a citation.*
- *End with a paragraph that states:*
  - *The research question*
  - *The purpose/aim of the work*
  - *The scientific hypothesis*
  - *1-2 takeaway points*

MATERIALS AND METHODS

This section should not be written as a step-by-step protocol, it must be written as continuous prose but with enough details that someone would be able to replicate your experiments. It should be written in past tense and passive voice. The materials, equipment, and animal/bacterial strains should have a company/supplier name given. Ensure you use the right notation for units (leaving a space between number and unit) and use SI units throughout. You can use an image or a diagram that helps explain the method or experimental design that you used.

This section can be divided into subsections with a header (in italics) as required, especially if you carried out different experiments. The first section may refer to the preparation of materials,

experimental set-up or collection of samples and the subsequent sections may refer to the data collection phase. You must also include the statistical tests used and any transformation of the data that is required to interpret the results. If you generated code, you can include it as an appendix to the manuscript or provide a link to a publicly available database where it can be found (eg. GitHub page if you have one).

RESULTS

*This section should be written in the past tense. Do not **just** include your figures and/or tables. First, describe the rationale of the experiment (why did it make sense to carry out that experiment?) and then briefly describe how it was done to help the reader understand the data you are presenting. Present the results within this paragraph making sure you refer to the relevant figures and tables that show those results. This way you present your results within the context of the experiment and it becomes easier to understand for the reader.*
Include here the results of statistical tests, however, include only the relevant p-value - in brackets followed by the alpha value that you set - next to the actual results. Do not include the table of results that you obtain from the statistics software. See the example below:

> *"The number of bacterial colony-forming units decreased significantly when the medium in agar plates contained 5 mg/L of ampicillin compared to plates with 1 mg/L ampicillin ($p=0.001$, $\alpha = 0.05$, two-sample t-test, Figure 1)"*

DISCUSSION

In this section start by summarising the results and what they mean in light of your research. Follow with an interpretation of the results. Draw conclusions from the observations, patterns or trends that you identified and the significance drawn from the statistical analysis. Compare your findings with the scientific hypothesis and provide an explanation or speculation as to why it was supported or not. Be careful not to overinterpret your results! Remember that your data supports a hypothesis, but it cannot definitely prove it (correlation does not mean causation). Include how your results may support or not the results of other researchers.

Discuss the limitations that could have influenced your results. Human error is assumed, so do not focus on this aspect, rather think of sample number, replicates, controls or if another method

would be more appropriate to achieve better results (consider the validity, reliability and accuracy of your results and method but do not write entire paragraphs about it). Discuss how your research can be extended and potential future experiments.

CONCLUSION

This section includes a succinct paragraph or two that briefly summarizes your results and touches on the overall impacts of your research. You should not introduce new information in this section.

ACKNOWLEDGMENTS (Optional)

Include anyone (person or institution) who helped with your research but didn't meet the requirements for authorship. Acknowledge any sources of funding for your work.

REFERENCES

References should be written in APA style and organised alphabetically by author. Make sure to include all the references cited within the text. Your references should come from reliable secondary sources. Avoid using blogs, social media posts or Wikipedia.
Remove any hyperlinks from the URLs in your references.

Figures and Figure Captions

Place your figures in this section with their caption located below the figure. The caption should include a title that briefly describes what is shown in the figure, any abbreviations used in the figure and statistical information if relevant, eg. n=10.
The caption should capitalise only the first letter of the first word and proper nouns or acronyms after that.

Tables with Captions

Place your Tables in this section with their caption located above the tables. Below the table include information such as any abbreviations used in the table, and explanations of any

asterisks or superscripts. If there are references in the table, they must also be added to the reference list. Tables should be in an editable format (not provided as jpeg/png/tiff files) and must be 1 page in size maximum. If this is not possible while still being legible, it will be placed in an appendix for the manuscript.

Appendix (If applicable)

An appendix is not required and it will only be accepted in special circumstances as required. If you think that your manuscript requires an appendix, include it here along with a statement of why it is necessary to understand your research. If the appendix contains code or programming script, it will not be necessary to write a justification statement.