**Title (**English**)**

The title should be a brief statement that clearly describes the objective or central topic of the study. Avoid redundancies or generic terms.
(No more than 18 words – no abbreviations – do not use phrases such as "a study" or "an investigation" – whenever possible, avoid including city or institution names; focus on the study's objective.)

***Título*** *(Español)*

Author11, Author22, Author*n* (Nombre y apellido de cada autor)

1 Affiliation of each author (Name of the Institution, Faculty-optional, Department-optional, City, Country, postal code)

official email, ORCID of each author in the order listed on line 5 (one row per author)

**Abstract**: The abstract should be a single paragraph of up to 250 words, using short and complete sentences with a clear and direct message. It must include the following information: 1. Objective of the study: Clearly state the research question or hypothesis. 2. Methodology: Provide a concise description of the key methodological aspects, ensuring sufficient details to explain how the objective was achieved, the hypothesis was tested, or the research question was answered. 3. Results: Summarize the key findings obtained through the implemented methodology. 4. Conclusion: Present a logically derived conclusion supported by the study's data. 5. Significance: Highlight the most relevant finding and the key message the authors want readers to remember.

**Keywords**: Write five keywords. They must be separated by commas and ordered alphabetically. Some of them must be in the title and must be generalized descriptors of the research topic.

**Resumen**: Aquí el resumen en Español.

**Palabras clave**: *Escribir las palabras clave en Español utilizando el mismo orden de las Keywords detalladas previamente en Inglés*.

# **Introduction**

The introduction should be presented as a single block of text without unnecessary subdivisions. In this section, the author must provide an overview of the topic to help the reader understand the study's context and relevance. It is essential to include recent references, preferably from the last five years, to ensure the information is up to date and aligned with current scientific advancements. However, older works may be cited if they are fundamental to the field of study. First, the author should outline what is already known about the topic, highlighting key aspects of previous literature that are directly related to the study's objective. This information should be presented clearly and concisely, avoiding irrelevant or redundant data. Next, the author should identify what remains unknown or the main gaps in current knowledge. This includes addressing the limitations of previous studies or findings from similar reviews, justifying the need for the present research. It is important to explain how these limitations create opportunities for new questions or hypotheses. Finally, the introduction should conclude with a clear statement of the study's objective, formulated in a specific and direct manner. If applicable, the author may include the hypothesis guiding the research or the central question being addressed. This final part should naturally transition into the next section of the manuscript, preparing the reader to understand the methodology employed.

#  **Methodology**

The methodology should be described clearly, in detail, and in a well-structured manner, enabling the reader to fully understand how the study was conducted. This section must address key questions such as: How was the study conducted? What steps were followed to achieve the stated objective? What procedures were used to test the hypothesis or answer the research question? Additionally, the text should convince the reader that the methods employed are appropriate and robust, ensuring the validity of the obtained results.

In the first part of this section, it is recommended to include a figure that provides an overview of the methodology used. This figure should schematically illustrate the main steps of the study in a logical and chronological flow. The text should complement this figure by describing each stage in a general and descriptive manner, ensuring that no essential details are omitted to facilitate understanding of the process.

Subsequently, the methodology should provide a detailed explanation of how data analysis was designed and executed. This includes describing the statistical methods applied, the tests performed, and the significance levels established. If the study involved simulations, it is important to outline how they were implemented, the parameters used, and the tools employed. Moreover, the experimental design should be clearly defined, including information about the treatments applied, experimental conditions, sample size, and data collection methods..

## **Subsection title**

All figures, tables, and equations mentioned in the text must be numbered sequentially. Figures should illustrate key concepts and be provided in a vector format, preferably in EPS or BMP, with a minimum resolution of 400 dpi to ensure high quality. Tables should include only top and bottom borders, and their content must be fully editable to facilitate use in the final publication. All measurements must adhere strictly to the International System of Units (SI). Decimal values should be separated by a period, while thousands should not be separated by spaces or commas. Equations should be written using a specialized equation editor and numbered sequentially, ensuring they are clear and precise. Special attention must be given to the presentation of graphs and analyses. All graphs should be created using specialized scientific publication software to guarantee accuracy and professionalism..

# **Results**

This section should clearly present the obtained results, written in the past tense and following the same logical and parallel sequence described in the methodology. It is important to avoid mixing explanations or interpretations of the results at this stage, as such reflections should be reserved for the discussion section.

When referring to figures, tables, or graphs, present tense should be used, as these elements represent information that the reader can directly observe. It is crucial to avoid duplicating information across text, tables, and figures. Numerical data and measurements should be presented in tables and figures, while the main text should provide a summary or explanation of what the data reveals.

Statistical analysis must be rigorous, specifying key metrics such as standard deviation or standard error of the mean to support the quality and accuracy of the findings. To ensure a clear and organized presentation:

1. Use the text to describe the findings.
2. Present data in tables, ensuring they contain only relevant values.
3. Use figures to provide a clear and impactful visualization of the information.

For example, a table may contain the average measurements obtained under different experimental conditions, while a figure could visually summarize these differences in a more effective and engaging manner..

# **Discussion**

The discussion section interprets and contextualizes the study's findings within the framework of existing scientific literature. It is crucial to begin by clearly and directly highlighting the study’s main finding, ensuring that the reader immediately understands the most significant contribution of the research. From this starting point, a detailed explanation of the findings should be provided, analyzing their meaning and how they address the research question or verify the initial hypothesis. It is important to logically argue how the results connect with the data presented in the previous section, offering potential explanations or mechanisms that support these findings. A critical aspect of this section is comparing the study's results with previous research. It should be discussed whether the findings align with existing studies, differ significantly, or expand upon current knowledge in the field. If the results are novel, this should be explicitly stated, emphasizing their relevance and contribution to the field. The discussion should also address the significance of the findings, answering key questions such as: What do these results mean? What impact do they have in the context of existing knowledge? How do they contribute to solving problems or filling gaps in the field? This analysis helps the reader grasp the broader implications and practical or theoretical utility of the research. Additionally, it is necessary to acknowledge the study's limitations. This includes mentioning factors that may have influenced the results, such as sample size, experimental conditions, or tools used. Recognizing these limitations does not weaken the study but rather demonstrates scientific rigor and paves the way for future research to address them. Finally, the discussion should conclude by revisiting the study's main finding, emphasizing its relevance, and offering a final reflection that summarizes the impact of the results. This ensures that the reader leaves with a clear and concise understanding of the study's importance, implications, and potential future applications. Table 1 outlines the key recommendations for effectively writing the discussion of results.

**Table 1.** Writing Suggestions for the Discussion Section of Results

|  |  |
| --- | --- |
| **Section** | **Description** |
| Introduction of the main finding | Begin the discussion by stating the most relevant finding of your research. Use clear and direct language to capture the reader’s attention and establish the focus of this section. Example: "The main finding of this study demonstrates that [brief description of the key result]." |
| Interpretation of the results | Explain the meaning of the results and how they address the research question or confirm the proposed hypothesis. Analyze the findings in depth, relate them to the obtained data, and explain the possible mechanisms or reasons behind them. |
| Comparison with previous literature | Discuss how your findings relate to previous research: Do they align with prior studies? Do they contradict them? Do they expand on them? Provide relevant references to support your claims. If the results are novel, explicitly state their originality and highlight why they are significant. Example: "Unlike previous studies that indicated [reference], our findings suggest that [explanation]." |
| Significance of the findings | Answer the key question: What is the importance of my results and what do they mean? Discuss how the findings contribute to advancing knowledge in the field, solve existing questions, or open new lines of research. |
| Study limitations | Honestly and objectively acknowledge the limitations of your research. Explain how these limitations may have influenced the results and suggest how future studies could address them. Example: "Although the obtained results are significant, a potential limitation of this study is [description], which could be addressed in future research." |
| Practical or theoretical implications | Analyze the potential applications of your findings, whether in practical contexts (industry, healthcare, technology, etc.) or theoretical contexts (new models, hypotheses, or conceptual frameworks). |
| Final conclusion | Conclude the discussion by revisiting the study's main finding. Emphasize its relevance and offer a final statement summarizing the study's impact on the research field. Example: "In summary, this study demonstrates that [main finding], which has significant implications in [context]. These results open new possibilities for [future research or applications]." |

# **Conclusions**

The conclusions section should be concise yet impactful, highlighting the most important insights from the study and directly connecting them to the presented data and analysis. It is essential to structure this section logically, starting with a clear summary of the main conclusions, which must be fully supported by the obtained results. This summary should effectively and directly communicate the study's core message.

Next, it is important to explain the practical or theoretical impact of the findings, emphasizing how they contribute to advancing knowledge in the field or how they can be applied to solve specific problems. This should be done concisely and without exaggeration. Additionally, the section should include suggestions for future research, pointing out potential areas for further exploration based on the study's limitations or findings. It is recommended to be specific when proposing new research directions.

Finally, the conclusion should end with a memorable statement that summarizes the study's impact, leaving a lasting impression on the reader. This statement should encapsulate the essence of the research and underscore its importance within the broader context of the field. To maintain objectivity, it is crucial that all claims are based on concrete facts and that generalizations or overestimations of the results are avoided.

### Acknowledgments

This section is intended to recognize the contributions of individuals, institutions, or entities that collaborated in the development of the research without being co-authors.

**Example:** The authors thank [name of person/institution] for their support in [description of contribution].

### Conflict of Interest

An explicit statement should be included indicating whether generative artificial intelligence (Gen AI) was used in the preparation of the article. If it was used, the specific tools and the scope of their use should be detailed.

**Example:** The authors report no conflicts of interest related to this research.

**Example:** The author [name] has a professional relationship with [organization], which represents a potential conflict of interest.

### Generative Artificial Intelligence (AI) Use Statement

Se debe incluir una declaración explícita indicando si se utilizó o no inteligencia artificial generativa (IA Gen) en la preparación del artículo. Si se utilizó, se deben especificar las herramientas y el alcance de su uso.

**Example:** No generative artificial intelligence was used in the preparation of this article.

**Example:** In the preparation of this article, [AI tool] was used for [description of use, e.g., initial draft generation, grammar correction, etc.]. All content was reviewed and approved by the authors.

### Funding Sources

This section should provide details about the entities or institutions that partially or fully funded the research, if applicable.

**Example:** This research was funded by [name of institution] under the project [project code/name].

### Author Contributions

For articles with multiple authors, a brief paragraph should be included specifying the individual contributions of each author, following the CRediT (Contributor Roles Taxonomy) format. The recommended format is as follows:

**Example:**

Conceptualization, X.X. and Y.Y.; methodology, X.X.; software, X.X.; validation, X.X., Y.Y., and Z.Z.; formal analysis, X.X.; investigation, X.X.; resources, X.X.; data curation, X.X.; writing—original draft preparation, X.X.; writing—review and editing, X.X.; visualization, X.X.; supervision, X.X.; project administration, X.X.; funding acquisition, Y.Y.

All authors have read and approved the published version of the manuscript.

**Important:** Authors can use automatic contribution generators based on the CRediT taxonomy, such as the one available at [https://credit.metabolomics.fgu.cas.cz/].

# **References**

They must be presented in accordance with IEEE standards.

It is recommended to review the following link: [https://www.bath.ac.uk/publications/library-guides-to-citing-referencing/attachments/ieee-style-guide.pdf].