

Peer Review

Review of: "Evaluation of Antidiabetic Potential of *Gymnema Sylvestre* and Metformin Combination in Streptozotocin-Induced Diabetic Rats"

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The study evaluates the hypoglycemic effect of the extract from the plant species *Gymnema sylvestre* and its combination with the drug metformin. I have highlighted some points where I see the need to improve the writing of the manuscript and emphasize the potential of the extract as an adjuvant for diabetes treatment. My suggestions are as follows:

- Correct **Gymnemasyvestre** to *Gymnema sylvestre* throughout the text (italicized and include the scientific identification at first mention). After the first mention of *Gymnema sylvestre*, use the abbreviation *G. sylvestre*.

Introduction

Suggestions for paragraph reformulation in the introduction (bolded highlights).

- In the first paragraph:

Type I diabetes, an autoimmune condition, is typically associated with the destruction of pancreatic beta cells, leading to insufficient insulin production. **The treatment includes insulin therapy aimed at controlling blood glucose levels and preventing complications.** On the other hand, Type II diabetes is characterized by insulin resistance and impaired insulin secretion. The treatment of diabetes **type II** primarily involves the use of oral antidiabetic agents such as metformin, which enhances insulin sensitivity. It **primarily operates by decreasing hepatic glucose synthesis, boosting peripheral glucose absorption, and enhancing insulin sensitivity**[5]. Metformin has been shown to be useful in managing hyperglycemia and reducing diabetic complications. However, long-term usage may cause

gastrointestinal adverse effects and lactic acidosis, making the quest for alternative therapies even more importante, especially with regard to reducing side effects and improving therapeutic outcomes.

- Please correct citation [3].
- Please correct citation [7], and rewrite this paragraph; as it stands, it gives the impression that there is already published work.

Material and Method

- How was the extract prepared (aqueous or hydroalcoholic)? Please specify.

Result

- Include the normal control group in Table 2 for the statistical analysis of blood glucose levels.
- Describe the meaning of each abbreviation in the table legends so that the reader does not need to refer back to the text.
- Suggestion: keep the tables in the manuscript; I do not see the need to include figures that show the same results already presented in the tables. Correct or remove the description "Fasting blood glucose" in Figure 2.

Discussion

- Include in the discussion of the results reports from the literature on extracts of the mentioned species, citing possible bioactive compounds present in the extract, or, if possible, perform an analysis by LC-HRMS or 1D and 2D NMR.

Declarations

Potential competing interests: No potential competing interests to declare.