

## Peer Review

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

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## Declarations

The authors have centred their research on the potential effects of metformin and *G. sylvestre* (GS) extract, in both combination and individual forms, on fasting blood glucose (FBG), total serum cholesterol, serum creatinine, and serum HbA<sub>1c</sub> levels in rats with a high-fat diet and STZ-induced diabetic rats, employing a biochemical approach.

1. Since the title does not adequately reflect the content of the article and only a limited number of biochemical parameters were examined in the serum of diabetic rats, this should be stated in the title.
2. The name of the plant should be written/given in italics (*Gymnema sylvestre*). Besides, its name should be abbreviated as *G. Sylvestre* (GS) throughout the manuscript.
3. In the Materials and Methods section, authors are recommended to provide a detailed explanation of the methodology employed to prepare the plant extract and the yield obtained.
4. The assessment of additional significant biomarkers, including those associated with oxidative stress whether enzymatic (SOD, CAT, and glutathione-related enzymes) or non-enzymatic ones (TAS, TOS, ROS, and oxidative stress index), is recommended. Furthermore, the potential impact of plant extract on pancreas tissue could be examined through the use of histological methods (if possible).
5. The phytochemical profile of GS should be elucidated using HPLC or LC-MS/MS. Then, an *in silico* molecular docking analysis should be performed on the resulting compounds (if possible).

6. In order to enhance the clarity and integrity of the article, it would be more appropriate to present the Results section as a textual narrative rather than in the form of a list of bullet points.
7. There are no appropriate descriptions representing captions of the Tables and Figures. Besides, these are not cited in the text.
8. In all Figures, values are presented by the authors as “Mean  $\pm$  Standard Error of the Mean (SEM)”. Nonetheless, the section entitled “Statistical Analysis” states that “all data are presented as “Mean  $\pm$  Standard Deviation (SD).” Which of these is correct?
9. Since it is superficial, the discussion section needs to be written in a more comprehensive manner. For this purpose, the possible mechanism of action of *G. sylvestre* is recommended to be clarified. In addition, the findings obtained in this study should be compared with previous studies using this extract, and the reason why the combination with metformin is not as effective should be explained.

## Declarations

**Potential competing interests:** No potential competing interests to declare.