

Borneo Journal of Pharmacy

Volume , Issue , May/November 20

Manuscript title: **Antioxidant, Antidiabetic, and Anti-obesity Potential of**

Ipomoea reptans P. Leaves

Response to Reviewer's comments

We thank the Reviewer for taking time to critically read our manuscript and gave valuable suggestions. We have made necessary changes in the manuscript in accordance with the input given, which were highlighted in the revised manuscript. Below are our point-by-point responses to Reviewer's comments.

1. The introduction is well-structured and systematically clear. However, very few previous studies on the activity of *I. reptans* have been mentioned.

Response: We have added more literature regarding previous studies on *I. reptans*, including its antidiabetic activities using animal models and possible mechanism of action.

2. Was the *I. reptans* sample not determined first?

Response: we did the characterisation of *I. reptans* and have included the information in the text (highlighted).

3. In Table I, how is it possible that for the ethanol fraction, the TFC value is higher than TPC?

Response: the difference in the trends observed for TPC and TFC is likely related to the various moieties attached to either phenolic or flavonoid compounds. these side chains may influence the solubility of phenolics and flavonoids in either ethanol and ethyl acetate.

Regarding why TFC was higher than TPC in ethanol, we have added this part:

The majority of flavonoids contain phenolic groups that would be identified in the phenolic assay. Thus, it was expected that the phenolic contents of the extracts would be higher than their flavonoids, such as those observed for ethyl acetate and hexane extracts. However, for the ethanol extract, phenolic content was found to be lower than flavonoid content. It might be that the use of polar extraction solvent contributes to the observed results. Previous studies have also reported similar findings in which higher TFC than TPC was obtained (Srisupap & Chaichaoenpong, 2021; Yi Ling et al., 2019). In this study, various parts of plants were extracted using ethanol and water and were tested for their TFC (by aluminium chloride method with quercetin standard) and TPC (by Folin-Ciocalteu method with gallic acid standard).

4. In Table II, are both ascorbic acid and BHT not tested? Why are the data for concentration and %inhibition not shown? The same condition applies to acarbose in Table IV.

Response: All the positive controls (ascorbic acid and BHT for antioxidant activity and acarbose for α -glucosidase inhibition activity) were tested in the experiments. We did not show the data due to limitation of space. However, we have amended this and have included the data as seen in Table II and IV.

5. In Table II, why are there 4 concentration ranges in the ethanol and ethyl acetate fraction but only 3 in hexane?

Response: unfortunately, for hexane fraction, we did not include the fourth concentration point due to the low R^2 value if this datum was included. Thus, we only used three concentrations.

6. In Table IV, if the ethyl acetate fraction does not show activity it should be filled with the number 0 instead of being left blank.

Response: we have rectified this table. In our experiment, the presence of different concentrations of ethyl acetate extract (3.13 - 12.5 mg/ml) only resulted in low inhibition %, in the range of 2.99 - 5.76 %. On the other hand, ethanol and hexane extracts in lower concentration ranges caused stronger inhibition, which was in contrast with that of ethyl acetate extract. With this observation, we concluded that ethyl acetate extract exerted 'no activity'. Instead of being left blank, we think it is better to add the concentration points in order to describe this result better.

7. In Figures 1 and 2, what is the reason that the anti-lipase and antitrypsin activity tests were not carried out on the hexane fraction?

Response: poor solubility of hexane fraction in the systems used both in lipase and trypsin reaction mixtures has caused low repeatability of the results. Thus, we decided not to include the hexane results.

Manuscript Assessment Form

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Manuscript title

Antioxidant, Antidiabetic, and Anti-obesity Potential of Ipomoea reptans P. Leaves

Please describe in brief what is the main topic of this article.

This article contains a study of various fractions of I. reptans in terms of their antioxidant, antidiabetic, and antiobesity activities.

Please describe your opinions regarding academic depth, suitability, accuracy of questions and research methodology.

1. The introduction is well-structured and systematically clear. However, very few previous studies on the activity of I. reptans have been mentioned.
2. Was the I. reptans sample not determined first?

Please describe your opinion regarding the academic depth, suitability, accuracy of the analysis and conclusions of the study.

1. In Table I, how is it possible that for the ethanol fraction, the TFC value is higher than TPC?
2. In Table II, are both ascorbic acid and BHT not tested? Why are the data for concentration and %inhibition not shown? The same condition applies to acarbose in Table IV.
3. In Table II, why are there 4 concentration ranges in the ethanol and ethyl acetate fraction but only 3 in hexane?
4. In Table IV, if the ethyl acetate fraction does not show activity it should be filled with the number 0 instead of being left blank.
5. In Figures 1 and 2, what is the reason that the anti-lipase and antitrypsin activity tests were not carried out on the hexane fraction?

Please describe your opinion regarding the accuracy and completeness of references / bibliography.

Very good references.

Please describe your opinion regarding the uniqueness or scientific contribution of this article.

This study is unique in that it compares several activities at once from the fractionation of a plant.

Please describe your opinion regarding the title of this article (proper title, concise, and clear or not).

Good title, but less attractive to readers.

Please write another review that has not been covered above.

Apart from several points that must be clarified, the results of this study are quite good.

Recommendation

Manuscripts can be published without changes

Manuscripts can be published if the Author has made a revision in accordance with the results of the improvements that have been made by the Reviewer (please write an outline of the revisions to the text, and the revised text please return to us)

Manuscripts can be published with improvements to the format and language that is sufficiently done by the Editor (please write if there are specifics below)

Manuscripts cannot be published (please write the reason)