Reviewer’s report

Title: In vitro α-Amylase Inhibitory Effect of TLC Isolates of Aloe megalacantha Baker and Aloe monticola Reynolds

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Reviewer: Abdulsamad Alsalahi

Reviewer's report:

To Authors

The findings are promising and encouraging further investigations after identifying the bioactive components of latex to be investigated individually for their in vitro inhibitory effect against α-amylase and α-glucosidase enzymes and in vivo.

1- Title

Since the in vitro α-amylase inhibitory effect of TLC latex isolate, the title should be modified to be (In vitro α-Amylase Inhibitory Effect of TLC Isolates of leaf latex of Aloe megalacantha Baker and Aloe monticola)

2- Background

- If any, the references about the epidemiology of diabetes mellitus should be updated.

- The first paragraph (line 6-46) is so long.

- The authors should justify why they focused only on T2DM? I think they should connect the in vitro inhibition of α-amylase to T2DM since α-acarbose is a well-known inhibitor of α-amylase to reduce the breakdown of carbohydrate and hence reducing the absorption of intestinal glucose and controlling postprandial blood sugar of T2DM.

- The authors did not focus on the limitations of the conducted studies on the antidiabetic activity of Aloe megalacantha Baker and Aloe monticola Reynolds particularly that the authors (line 19) demonstrated that Leaf latex of A. megalacantha was reported to exhibit significant antidiabetic activity in streptozotocin-induced diabetic mice [18]. The former correction should be included in the Background to justify the objective of the study. (this is very important for the novelty).
- The authors also should provide why the in vitro inhibition of α-amylase is related to the management of hyperglycemia of diabetes mellitus. (clarify the role).

- The authors should add the technique of traditional using the Leaf latex of A. megalacantha and Aloe monticola by locals (If any, the dose, the extraction, dried or fresh…etc).

3- Methodology

- The authors used preparative TLC for collecting the latex, but they did not justify why they used TLC instead of dissolving the dried collected latex directly in methanol or as being used by locals, particularly that they did not use TLC for identification purpose unless the developed zones on the thin coat are specified compounds according to their Rf values. For identification of the compounds in the developed scratched zones, at least fractionation column chromatography, HPLC should be run to collect the developed fractions and investigating the in vitro inhibition of each fraction against α-amylase. This would be more effective and suitable for further investigation of the effective compounds.

- In TLC technique, the solvent front was not mentioned and the distance reached by the zones to calculate the Rf values.

- It is well known that both α-amylase and α-glucosidase are key enzymes in the breakdown of intestinal ingested carbohydrate particularly α-glucosidase enzymes determine the final limit step of converting oligosaccharides into glucose unit. The authors should elaborate the study to include the inhibitory effect against α-glucosidase.

4- Results

The results are clear

5- Discussion

These two parts should be rewritten after going through the corrections.

6- Conclusion
Rewrite the conclusion in a soft language since there are no adequate evidence-based markers because the study is still in vitro without any in vivo preclinical evidence to support the conclusion.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

No

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

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