Reviewer’s report

Title: Biochemical characterization and 1H NMR based metabolomics revealed Melicope lunu-ankenda leaf extract a potent anti-diabetic agent

Version: 0 Date: 06 Mar 2017

Reviewer: Hsiu-Mei Chiang

Reviewer’s report:

The purpose of this study was to investigate anti-diabetic effect of Melicope lunu-ankenda (ML) leaves extract. The ML leaf extract significantly increased insulin level and insulin sensitivity of obese diabetic rats by decreasing glucose level and insulin resistance, as well as reducing hyperlipidemia.

This study is interesting and important in the benefits of herbs and the application metabonomic approach on serum biomarkers. However, there are some points must be clarified.

1. The description of different groups of animal treatment in 2.2 animal experiments and 2.3 experimental design was confused, and it must describe clearly.

2. Why the food consumption was similar in all the groups? The diabetic mice may consume more food and water.

3. The levels of ALP, ALT, AST and urea of normal diet group mice were significantly different before and after treatment (Table 1). It is unreasonable because the normal diet group was administrated with same treatment from beginning to end.

4. The weight of spleen in DG and MG groups were decrease compared to control and ML groups (Table 2). Any explanation for these results?

5. The description about the different treated group mice was confused. Authors have to check their manuscript thoroughly.

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

No

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.

Yes

**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

**Quality of written English**

Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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