Reviewer’s report

Title: Natural honey reduces blood alcohol concentration but not affects the level of serum MDA and GSH-Px activity in intoxicated male mice models

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Reviewer: Sui-Chu Yin

Reviewer’s report:

In this study, submitted by Shi P et al., they reported their finding that natural honey could reduce the concentration of blood alcohol in mice and, hence, reduce the intoxication effect of alcohol. However, natural honey would not prevent liver injury by alcohol based on selected marker activities.

The questions are clearly defined, and the description is straightforward. Their result is consistent with previous reports from studies on rats.

Major Compulsory Revisions:

1. In conjunction Figure 1 with Figure 2, the authors think that honey could reduce blood alcohol concentration, which was mainly resulted from the major component, fructose. But the major components contained in the studied honey are fructose and glucose, whether or not to clarify the effective one. Could the authors design another study, as figure 1, replace the honey with fructose and/or glucose to confirm the results.

2. In figure 1, an interesting point is that “high dose honey” showed similar effect as “low dose honey”. Will the authors elaborate on this observation?

3. In the Abstract, paragraph “Conclusion”, lines 1-2, the authors state that the anti-intoxication activity of honey could result mainly from the effect of the fructose contained in the honey, but there was no mention any fructose-related results in the Abstract, paragraph “Results”.

Minor Essential Revisions:

1. The data for figure 1 were sampled at 20, 40, 60 min, while the scale (X-axis) is labeled as 15, 35, 55, 75 min. Please change the scale to 20-min intervals to help the readers.

2. In figure 1, the high dose honey shows effect slight less than the low dose one at all 3 sampling points. However, in the Results, paragraph “Prevention drunkenness”, lines 4-7, the authors state that high dose honey showed significant effect at 20 and 40 min whereas low dose honey at 60 min. Please clarify.

3. It is prudent for the authors to describe in more detail about the natural honey they used in this study. For example, the source, the origin of production, etc. Since in the field of Chinese traditional medicine, it is generally believed that even honey from different flowers may have various effects. Secondly, how did...
the authors decide that the honey they used is natural or not?

4. “in” 60 min means “after” 60 min, not “within” 60 min. The authors need to check the sections of “Methods” as well as “Results” to be sure what they really mean.

5. In the Results, paragraph “Effect of honey on blood ethanol concentration in alcoholized mice”, lines 1, please confirm “The ethanol determination results were listed in Table 2”, is that correct?

6. The labels of the figures are not clear enough to understand easily. For example, in figure 1, what is the meant by “Activity numbers”? The same problem as in figure 2, Y-axis lack of labeling.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

None.