Author's response to reviews

Title: Antihyperglycemic and antihyperlipidemic activities of aqueous extract of Hericium erinaceus in experimental diabetic rats

Authors:

Bin Liang (liangtechb1@yahoo.com.cn)
Zhengdong Guo (guozhendong_cmu@yahoo.com.cn)
Fang Xie (xiefangcmu@yahoo.cn)
Ainong Zhao (zhaoainongcmu@yahoo.cn)

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Author's response to reviews: see over
Dear PhD Tom:

Thank you very much for your kind letter and advice. We have revised the manuscript in accordance with the reviewers’ comments. Revised portions are underlined in red.

Editorial comments:

- While understandable, we recommend that you proofread your manuscript to remove any typographical errors, and to improve the style and flow of written English. You may wish to ask a native English speaking colleague to assist you with this.

I have asked an English teacher to proofread our manuscript.

Reviewer's report:

1. Abstract section, background subsection, the phrase “as a traditional Chinese medicine or food,” should be deleted. This expression tends the issue to local concerns. In fact, this mushroom is consumed in nearly half of the world.

Ans: Thanks for your suggestion. I have changed this phrase.

2. In the same place, last sentence, the name of the mushroom should start with a capital letter.

Ans: I have revised it.

3. Key words section, there is nothing to do with insulin resistance in the paper.

Ans: I have deleted the key word, “insulin resistance”, and added the key word “oxidative stress”.

4. Introduction section, page 4, it is stated as follow “but the effect of Hericium erinaceus on hyperglycaemia, hypolipidemia, lipid peroxidation and antioxidant enzymes activities in diabetes have never been examined. “ On the other hand, in the just previous paragraph, page 3 and last paragraph, they mentioned that reference [12] reported the hypolipidemic activity of the mushroom studied. In this case, the authors should clarify the contrast in their statements.

Ans: Thanks. I have clarified the contrast in the manuscript.

5. In the methods section, first sentence (red colored) and following should be merged and revised to make more sense if it is bought a readily milled etc.

Ans: I have revised it. I purchased the aqueous extract of Hericium Erinaceus, and make different concentrations of AEHE solution.

6. In conclusion, page 12, the statement “in STZ-induced diabetic rats by increasing insulin secretion…” seems to be a bit strange, because the STZ-induced diabetic animals lose their beta-cells in their pancreas and they develop insulin-dependent DM. We expect the authors to clarify this status.

Ans: This sentence “..in STZ-induced diabetic rats by increasing insulin secretion…” is our speculation on the hyperglycemic mechanism of HE, and I have deleted this sentence.

7. In Tables 1 and 2, we need to know the full writing of abbreviations in the Tables. They are written in the text but should be written in the legends of the
tables and figures to make sure that anyone should understand the tables or figures even without looking at the text.

Ans: Thanks. I have added the abbreviation in the Table.

8. In figure 3, A and B give the same parameters’ (GSH) values but data are not the same. Please do have a look at carefully.

Ans. I have checked the Figure 3, and revised it.

Reviewer's report:

Major comments

The authors have investigated that antihyperglycemic, antihyperlipidemic antioxidative activities of Hericium erinaceus in STZ-induced diabetic rats. Health effects of Chinese mushrooms are interesting and promising. However, the authors should have shown active compounds in AEHE, at least speculated those in the “Discussion” section. The data were clear, but there was no discussion about the mechanism on these hypoglycemic, hypolipidemic and antioxidative effects of AEHE, although the mechanism is the most important point for this manuscript. Since several manuscripts on Hericium erinaceus has been published, even the authors firstly used diabetic rat, the power of this study is weak without the explanation of active compounds and the mechanism. Furthermore, there are serious concerns on statistics, because the authors
did not mention about any method of statistical analysis in the text.

Ans: Thanks for your suggestion. Your comments were helpful and gave us a better perspective of our work. I have revised it according to your suggestion.

General comments

1. The authors should have used a semi-purified diet as AIN-93 for this study.

Some similar active compounds might be contaminated in the standard commercial pellet diet.

Ans: We agree with the reviewer’s viewpoint. In our experiment, we did not used AIN-93 diet, but used LAD 1000M purified diet for rats (GB 14924.3-2010) (Trophic Anima Feed High-tech Co Ltd, China).

2. Please clarify the method of statistics in the text.

Ans: I have added the method of statistics in the manuscript.

3. Please clarify about “glibenclamide”, and compare with the efficacy of AEHE, not only in "Results" section, but also "Discussion" section including its pharmacological action.

Ans: I have added the pharmacological action of glibenclamide in discussion section.

4. There was no Table 1 for body weight of animals. Food intake of animals is also important.
Ans: Table 1 is Effect of AEHE on body weights in experimental rats. I have revised it and made it more sense. During the whole experiment, the rats were weighted every day, but we have only emphasized the differences of the body weights in six groups at three time points. NM group (normal control rats treated with vehicle alone) and NM+AEHE group (normal control rats treated with AEHE) were used as controls.

Specific comments

1. Page 4, Line 6 from the bottom, male Wistar rats? “r” was missing. It should be not italic.

Ans: Thanks. I have revised it.