OPEN PEER REVIEW

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Peer Review Report for "The Effect of Swimming Training and Cinnamon Consumption on the Gene Expression of *GLUT4* and *Insulin Receptor* in the Brown Adipose Tissue of Diabetic Rats"

Author(s): Mojtaba Karimi Fard, Ali Khajehlandi, Amin Mohammadi

Review Timeline:

Submit Date: 17 Oct 2020
Revised Date: 14 Nov 2020
Accepted Date: 25 Nov 2020

Revision (0)

Here, you can see the **Reviewers**, **Associate Editors** and **EICs'** comments from the beginning to the end of the revision process.

REFEREE: Reviewer | **Revision** (0) 18 Oct 2020

Dear AE,
I appreciate the paper, the topic seems interesting. However, there are certain minor concerns as addressed in the following.
1. Please revise the Keywords, it seems you can substitute them with better choices.
2. Please polish your manuscript for syntax and grammatical errors.
Thanks

REFEREE: Reviewer | **Revision** (0) 19 Oct 2020

Dear AE,
The authors tried to assess the simultaneous effects of swimming and cinnamon consumption of mRNA levels of two genes involved in glucose metabolism.
Major comments:
- The authors tried to assess gene expression of GLUT4 and IR without comparing the mRNA levels of these target genes to a house-keeping gene (i.e, GAPDH, or beta-actin). In this case, how did the authors validate their findings? What method was used for evaluating

mRNA levels of the studied genes?
- There are inconsistencies in the results of the study as swimming enhanced the expression of the studied genes and the combination of Ci+S affected gene expressions even lesser than Ci alone. Please discuss these findings.
Minor comments:
- the manuscript should be checked for possible grammatical- and also typo-errors. There are numerous mistakes to list. For example "Recent research findings indicate that..."
- In all parts of the manuscript, the name of all genes should be written in italic.
- Primer blast results identified no target templates for the GLUT4 gene in the NCBI database. Please check the sequences provided in Table 1.
- In Figures 1 and 2, Please change the vertical axis to "Fold change in mRNA expression".
Thanks.

REFEREE: Reviewer | **Revision** (0) 22 Oct 2020

Dear AE,
In this manuscript, the authors analyzed the effect of swimming training and cinnamon consumption on the gene expression of GLUT4 and insulin receptors in the brown adipose tissue of diabetic rats. Totally, the manuscript is well organized and has notable novelty. However, it needs some minor revisions as follow:
1. In the text of the article, use the plus word instead of its symbol.
2. The limitations of the study should be added to the manuscript.
3. Guidance for future research should be provided based on the outcomes of the present study.
Thanks.

Saeedeh Salimi: Associate Editor | **Revision** (0) 22 Oct 2020

Dear EIC,
As reviewer 2 has explained, this manuscript suffers from a serious problem. There is no housekeeping gene for real-time PCR analysis.
Indeed, The authors should explain the calculation of expression ratio (fold) in statistical analysis.
Best regards

Zahra Heidari: EIC | **Revision** (0) 24 Oct 2020

Dear Authors,
Based on the reviewers' and AE comments this manuscript needs major revisions and a point by point reply to the comments.
Thanks.

OPEN PEER REVIEW

Revision (1)

Reply to Reviewers

Ideally, the reviewing process can significantly improve the submitted manuscripts by allowing the authors to take into account the advice of reviewers. Author(s) must reply to all reviewers' comments in a separate Word file, point by point. A "**Reply to Reviewers**" document is submitted along with revised manuscript during submission of revised files, summarizing the changes that the authors made in response to the reviewers' comments. The responses to reviewers' comments specifies how the authors addressed each comment the reviewers made.

You can read the authors' responses to the reviewers' comments in the next page.

Dear Editor-in-Chief

I would like to thank you and the respected reviewers so much for your kind attention to my article entitled **"The effect of swimming training and cinnamon consumption on the gene expression of *GLUT4* and *insulin receptor* in the brown adipose tissue of diabetic rats"**. The comments given by respected reviewers were followed and the required revisions were made in the article accordingly. Major revisions and corrections were shown in red in the manuscript as follows.

Thank you again for your kind attention.

Best regards,

Dr. Ali Khajehlandi

Reviewer 1:

Major comments:

Regarding the insightful comment by respected reviewer, in the present study, Real Time PCR was performed using an internal control gene called Actin, Beta. Then, after obtaining the expression threshold for each gene, quantification was performed by the formula $2^{-\Delta\Delta Ct}$. Methodological corrections of this section were added in the given section of the article and marked in red.

In the present study, the results showed that the consumption of cinnamon modulated the effect of swimming training. This finding needed to be discussed, and thus considering the valuable opinion of the esteemed reviewer, the discussion related to this finding was added to the text.

Minor comments:

The text of the article was reviewed by an expert and spelling and grammar corrections were made.

The names of the genes were converted to italic throughout the text and marked in red.

The sequence of primers in the present study was reviewed and the correct primers were presented in Table 1.

In Figures 1 and 2, according to the scale and quantification method performed on the internal control gene, the scale was changed to relative expression. However, the scale will change to Fold change in mRNA expression.

Reviewer 2:

Respectfully, the keywords were reviewed and an attempt was made to select better ones.

The text of the article was reviewed by an expert and spelling and grammar corrections were made.

Reviewer 3:

In the text of the article, the word plus was used instead of its symbol in the necessary places.

Limitations of the present study were stated.

First, the limitations of the present study were stated, then research suggestions for future studies based on the limitations were presented.

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Revision (1)

Here, you can see the **Reviewers**, **Associate Editors** and **EICs'** comments from the beginning to the end of the revision process.

REFEREE: Reviewer | **Revision** (1) 19 Nov 2020

Dear AE,
The study is reviewed carefully. According to comments and revisions by the author, this manuscript is accepted.
Thanks

REFEREE: Reviewer | **Revision** (1) 21 Nov 2020

Dear AE,
1- The official name of the Beta-Actin gene is ACTB.
2- It is better to add an abbreviation list in the figure legends.
Thanks.

REFEREE: Associate Editor | **Revision** (1) 24 Nov 2020

Dear EIC
Based on the authors' answers to the reviewers' comments, the reviewer(s) have recommended publication.
Kind regards.

Zahra Heidari: EIC | **Revision** (1) 25 Nov 2020

Dear Authors,
Based on the reviewers' and AE comments, this manuscript can be accepted for publication in GCT.
Thanks.