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OPEN PEER REVIEW

Activating the Protein Synthesis Signaling by HIIT Concomitant with the Suppression of Protein Degradation in Wistar Rats' Skeletal Muscle

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SUBMITTED	REVISED	ACCEPTED	DOI
3 Sep 2021	28 Sep 2021	10 Oct 2021	10.5812/gct.119242

About this report

This open peer review (OPR) report shows the public comments made on this article during peer review, by the reviewers, the associate editor and the editor-in-chief, for every revision round, together with the authors' replies. Comments appear only with the consent of the people who wrote them. Reviewers who chose to sign their report are named; the others are shown as "Referee". Comments are edited for language only, and confidential remarks to the editors are not included.

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1 Original submission

3 comments · 12 Sep 2021 – 20 Sep 2021

Bahman Fazeli-Nasab Reviewer

MAJOR REVISION 12 Sep 2021

All comments are listed in the article text.

Referee 1 Reviewer

MINOR REVISION 13 Sep 2021

The manuscript could be accepted as an original article for publication after Minor revision as follows:

Comments:
1. The English language is poor. Please edit the whole manuscript to improve its English structure.
2. The subject of this manuscript is not new and does not help to increase knowledge.

3. Why is the soleus muscle selected? ...
4. In the introductory part, the review of studies and the statement of the problem are fragmentary and irrelevant. The studies do not correspond to the purpose of the study and need to be rewritten.
5. Is eight weeks really enough to change the expression of genes and proteins?

6. The need for this research is not well stated in the introduction.
7. Please provide the necessary explanations about the prevalence of these diseases in the introduction section.

8. The possible mechanisms of the effect of HIIT on muscle biomarkers are discussed in the discussion.
9. Add the graphical abstract to the article.
10. Enter the F values correctly.

Editor-in-Chief

MAJOR REVISION 20 Sep 2021

Based on the reviewers' comments and my reading, this manuscript needs major revisions, English language editing, and a point-by-point reply to the comments.

2

Revision 1

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

Associate Editor's Comments:

1. The English language, is poor. Please edit the whole manuscript for English structure.

Done.
2. The subject of this manuscript is not new and does not help to increase knowledge.

The novelty of the research was edited in the abstract and at the end of the background.
3. Why is the soleus muscle selected? ...

The soleus is muscle widely used in many studies, including the article (Cui et al, 2019) which was recently added to the manuscript, that HIIT was applied in. Moreover, the reasons for selecting the soleus muscle can be found in the following articles.

Herzog W, Leonard TR, Renaud JM, Wallace J, Chaki G, Bornemisza S. Force-length properties and functional demands of cat gastrocnemius, soleus and plantaris muscles. Journal of biomechanics. 1992 Nov 1;25(11):1329-35.

Prilutsky BI, Herzog W, Leonard TR, Allinger TL. Role of the muscle belly and tendon of soleus, gastrocnemius, and plantaris in mechanical energy absorption and generation during cat locomotion. Journal of biomechanics. 1996 Apr 1;29(4):417-34.
4. In the introductory part, reviewing studies and expressing the problem is fragmentary and irrelevant. The studies do not correspond to the purpose of the study and need to be rewritten.

Some detailed definitions and related references were deleted and two articles related to the research subject were added.
5. Is eight weeks really enough to change the expression of genes and proteins?

An eight-week exercise training protocol was used in most studies, however, the alteration of gene expression induced by the exercise (one session) has been reported and one of them was mentioned in the discussion section "*gene expressions of the FoxO3a and MuRF1 in human skeletal muscle immediately after running exercise*".
6. The need for this research is not well stated in the introduction.

The necessity of the research was rewritten.
7. Please mention the necessary explanations about the prevalence of these diseases in the introduction section

The related data about the prevalence was added.
8. The possible mechanisms of the effect of HIIT on muscle biomarkers are discussed in the discussion.
9. The graphical abstract to be added to the article.

An illustration was added to the manuscript.
10. Enter the values of the F correctly.

Done, except the eIF4EBP1 values, which were evaluated by nonparametric test, Mann-Whitney U test.
11- In materials part 1 add humidity conditions for animals see the following reference "Rosuvastatin enhanced functional recovery after sciatic nerve injury in the rat " also for Gene expression part use this reference.

The humidity conditions and the suggested reference for gene expression were added.
12- Give reference to Western blot analysis part.

A reference was added.
13- in result part put the figure legends under the figures it is difficult to understand it.

According to the comment of reviewer 1, an illustration was added to the manuscript.

Reviewer 1:

The manuscript could be accepted as an original article for publication after Minor revision as follows:

Comments:
1. The English language, is poor. Please edit the whole manuscript for English structure.

Done.

2. The subject of this manuscript is not new and does not help to increase knowledge.

The novelty of the research was edited in the abstract and at the end of the background.

3. Why is the soleus muscle selected? ...

The soleus is muscle widely used in many studies, including the article (Cui et al, 2019) which was recently added to the manuscript, that HIIT was applied in. Moreover, the reasons for selecting the soleus muscle can be found in the following articles.

Herzog W, Leonard TR, Renaud JM, Wallace J, Chaki G, Bornemisza S. Force-length properties and functional demands of cat gastrocnemius, soleus and plantaris muscles. Journal of biomechanics. 1992 Nov 1;25(11):1329-35.

Prilutsky BI, Herzog W, Leonard TR, Allinger TL. Role of the muscle belly and tendon of soleus, gastrocnemius, and plantaris in mechanical energy absorption and generation during cat locomotion. Journal of biomechanics. 1996 Apr 1;29(4):417-34.

4. In the introductory part, reviewing studies and expressing the problem is fragmentary and irrelevant. The studies do not correspond to the purpose of the study and need to be rewritten.

Some detailed definitions and related references were deleted and two articles related to the research subject were added.

5. Is eight weeks really enough to change the expression of genes and proteins?

An eight-week exercise training protocol was used in most studies, however, the alteration of gene expression induced by the exercise (one session) has been reported and one of them was mentioned

in the discussion section "*gene expressions of the FoxO3a and MuRF1 in human skeletal muscle immediately after running exercise*".

6. The need for this research is not well stated in the introduction.

The necessity of the research was rewritten.

7. Please mention the necessary explanations about the prevalence of these diseases in the introduction section
The related data about the prevalence was added.

8. The possible mechanisms of the effect of HIIT on muscle biomarkers are discussed in the discussion.
9. The graphical abstract to be added to the article.

An illustration was added to the manuscript.

10. Enter the values of the F correctly.
Done, except the eIF4EBP1 values, which were evaluated by nonparametric test, Mann-Whitney U test.

Reviewer 3:
Dear editor
Manuscript is suitable but I give some comment for improving the manuscript.

1- English of the manuscript is weak and should be checked by native.

Done.
2- In materials part 1 add humidity conditions for animals see the following reference "Rosuvastatin enhanced functional recovery after sciatic nerve injury in the rat " also for Gene expression part use this reference.

The humidity conditions and the suggested reference for gene expression were added.
3- Give reference to Western blot analysis part.

A reference was added.
4- in result part put the figure legends under the figures it is difficult to understand it.

According to another reviewer's comment, an illustration related to both signalings was added to the manuscript.

2 Revision 1

2 comments · 2 Oct 2021 – 10 Oct 2021

Referee 2 Reviewer

ACCEPT 2 Oct 2021

The revised manuscript has been improved and is coherent, and I wish the authors the best.

Editor-in-Chief

ACCEPT 10 Oct 2021

Based on the reviewer's and AE's comments, the revisions were done well. Thus, this manuscript can be accepted for publication in GCT.