**Responses to Academic Editor**

Thank you very much for your kind comments. We revised the manuscript as follows according to your suggestions and indications.

**Responses to reviewer 1**

Thank you very much for your kind reviewing.

**Reviewer 1**

**Basic reporting**

Very good.

**Experimental design**

Excellence.

**Validity of the findings**

No problem.

**Comments for the author**

I think that it is a excellent article.

**Responses to reviewer 2**

We wish to express our strong appreciation to the reviewers for the insightful comments on our paper. We feel the comments have helped us significantly improve the paper. We revised the manuscript as follows according to your suggestions and indications as below.

**Reviewer 2**

**Basic reporting**

The authors demonstrated that all rice koji have the anti-obesity or anti-diabetes effects although the mechanisms may differ depending on the type of rice koji consumed. This study include an interesting finding, hover, they should revise it according to the following suggestions.

**Experimental design**

1. To clarify the effects of these extract on hepatic fatty acid synthesis, the authors should measure the expression of mRNA levels of ACD, acyl-coenzyme A dehydrogenase, CPT II, carnitine palmitoyl transferase II, ACC, acetyl-CoA carboxylase, ACL, ATP citrate lyase in addition to FAS, ACACbeta, and PPARalpha.

Thank you for your suggestion. As pointed out, we have conducted these additional experiments and have changed/added the following sentences in the Material & Methods and results sections as follows:

*(Lines 137-146 in the Materials & Methods section)*

Fatty acid synthase (FAS; GenBank accession No. NM\_007988.3), acetyl-coenzyme A carboxylase-α (ACACα; GenBank accession No. NM\_NM\_133360.2), acetyl-coenzyme A carboxylase-β (ACACβ; GenBank accession No. NM\_133904.2), carnitine palmitoyltransferase 2 (Cpt2; GenBank accession No. NM\_009949.2), acyl-Coenzyme A dehydrogenase, very long chain (Acadvl; GenBank accession No. NM\_017366.3), acyl-Coenzyme A dehydrogenase, long-chain (Acadl; GenBank accession No. NM\_007381.4), acyl-Coenzyme A dehydrogenase, medium chain (Acadm; GenBank accession No. NM\_007382.5), and peroxisome proliferator-activated receptor-α (PPARα; GenBank accession No. NM\_001113418.1) were the target genes.

*(Lines 278–285 in the Results section)*

*Fatty acid synthase (FAS), acetyl-CoA carboxylase α (ACACα), acetyl-CoA carboxylase β (ACACβ), carnitine palmitoyltransferase 2 (Cpt2), acyl-Coenzyme A dehydrogenase, very long chain (Acadvl), acyl-Coenzyme A dehydrogenase, long-chain (Acadl), acyl-Coenzyme A dehydrogenase, medium chain (Acadm) and peroxisome proliferator-activated receptor α (PPARα) was investigated herein. In the liver, the expression of FAS, ACACα, Cpt2, Acadvl, Acadl, Acadm and PPARα genes was not significantly different after 4 weeks of HFD feeding (Fig. 1).*

2) The authors should investigate the GLUT4 expression on muscle of in vivo model, and should investigate the effect of these extracts on the expression of GLUT4.

Thank you for your suggestion. As pointed out, the investigation of *GLUT4* expression in the muscle tissues in an *in vivo* model is an important subject. Therefore, we conducted the additional experiments as fast as we could according to your suggestion. We have taken the gastrocnemius muscle tissues just in case in this study. Unfortunately, we were unable to detect any differences between the experimental groups using western blot analysis. We think that this may be due to the use of the whole gastrocnemius muscle without being separated red and white muscles in the analysis. The tissue of mice is too small to separate red and white muscle. Consequently, it might be hard to detect differences between the experimental mice groups in the present study.

Based on these results, we have changed and added the following sentences in the Discussion section:

*(Lines 342–345 in the Discussion section)*

Although we faield to show the difference between the experimental groups of GLUT4 expression in gastrocemius muscle tissue of mice (data not shown), it might be difficult to detect the difference without separation of red from white muscle tissue, the former of which contains more GLUT4 protein (Kern et al., 1990)

We strongly support that red and white *koji* were capable of inducing GLUT4 protein expression. Therefore, we also have conducted an additional experiment to reveal the key compounds in red and white *koji* *in vitro*. We could identify monacolin K and monascin as the effective compounds in red *koji* to induce the GLUT4 expression. So, I have added this new data as Fig.5., and described these findings in Material & Methods, results and discussion sections.

*(Line 177-180 in Materials & Methods section)*

*(Line 308-318 in Results section)*

*(Line 339-342 in Discussion section)*

*(Line 352-356 in Discussion section)*

**Validity of the findings**

The authors should carefully evaluate the effects of extracts on myotube cells, and also should confirm these findings using samples from in vivo model.

This point has been previously addressed. Please see comment no. 2 in the Experimental design.

**Comments for the author**

They should revise it according to the following suggestions.