**ANSWERS TO REVIEWERS**

We thank the Referees for their interest in our work and for helpful comments that will greatly improve the manuscript and we have tried to do our best to respond to the points raised. The Referees have brought up some good points and we appreciate the opportunity to clarify our research objectives and results. As indicated below, we have checked all the general and specific comments provided by the Referees and have made necessary changes accordingly to their indications.

## 1. This statement must be mentioned in the text, and a certificate of statistical review signed by a biostatistician must be provided in PDF format.

AS your kindly comment, We added in the text that "the statistical methods of this study were reviewed by Jin Hyun Jun from the Department of Biomedical Laboratory Science, Department of Senior Healthcare,BK21 plus Program, Graduated School, Eulji University, Seongnam, Korea. Statistical methods in this study are adequately and appropriately which could verify the results." And we write the PDF format with biostatistician and Correspondence author`s sign.

## 2. Please write the COMMENTS section at here. See the format in the Format.

AS your kindly comment, We added in the text that comments.
The contents of comments are below.
COMMENTS
(1) Backgrounds
Melatonin is secreted by pineal gland. It functions as a regulator of circadian rhythms and an antioxidant. Melatonin levels in the gut are independent of pineal production. The gut contains at least 400 times more melatonin than the pineal gland, emphasizing the functional importance of melatonin in the gut. The melatonin in GI tract has anti-inflammatory effect in experimental models of colitis in many previous reports.

(2) Research frontiers
Our previous study also shows that mRNA level of adiponectin is down regulated by sleep deprivation but up-regulated by melatonin based on microarrays and real-time PCR analysis of mice colon tissues

(3) Innovations and breakthroughs
This is the first study that melatonin and sleep deprivation are related to adiponectin expression in the colonic mucosa of murine colitis being performed by immuno-histochemical staining and Western blot analysis. So, we confirmed previous genetic change of adiponectin on microarrays and real-time PCR analysis.

(4) Applications
The expression level of adiponectin in mucosa was decreased in colitis, with the lowest level observed in colitis combined with sleep deprivation. Melatonin injection significantly recovered the expression of adiponectin. This study suggests that melatonin and adiponectin synergistically potentiate the anti-inflammatory effects in murine colitis.

(5) Terminology
No specific terminology are used in this paper

3. Please provide the decomposable figure of Figures, whose parts are movable and can be edited. So please put the original picture as word or ppt or excel format so that I can edit them easily.

AS your kindly comment, We make the decomposable figure in the ppt and excel and next we moved this pictures to the MS word. Thank you for your kind review.