

**Revised submission of manuscript NO: 55126 by Song *et al.***

Dr. Lian-Sheng Ma

Company Editor-in-Chief, Editorial Office

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Dear Dr. Lian-Sheng Ma

Thank you for granting us the opportunity to revise our manuscript for publication in *World Journal of Stem Cells*. The peer-review report raised many concerns and pointed out many important aspects of our study, and we thank them for their helpful comments. We have modified our manuscript as suggested and have attempted to address all of the concerns raised. Here, we submit the revised version with a point-by-point response to the reviewer's comments and questions.

Sincerely yours,

Professor Seok-Goo Cho, M.D., Ph.D.

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**Manuscript NO.: 55126**

Title: Human mesenchymal stem cells derived from umbilical cord and bone marrow exert immunomodulatory effects in different mechanisms

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The authors have been investigated the difference in mechanisms of the immunosuppressive effects of umbilical cord-derived mesenchymal stem cells (UC-MSCs) and bone marrow-derived MSCs (BM-MSCs). They have concluded that UC-MSCs and BM-MSCs exhibit similar immunosuppression properties in different mechanisms, and UC-MSCs have potentials to substitute BM-MSCs as cell therapy products. In generally, this is a well-planned and -conducted study which would contribute the literature. However, I would like to make some suggestions which those are: i) background could be concise, instead some data could be provided in Abstract; ii) the sentence of "We found that UC-MSCs may be successful alternatives to BM-MSCs for GVHD treatment" at the end of Introduction is inappropriate, because it is a conclusion statement; iii) giving general information in Results section such as "One function of MSCs is to differentiate into osteoblasts, chondrocytes, or adipocytes[20]" is inappropriate, which could be provided in Methods and Discussion; iv) repetitions of

figures within paragraph in Discussion are inappropriate.

1. Background could be concise, instead some data could be provided in Abstract:

Response: Thank you for your comments. As you have pointed out, we revised background more precisely and added some data in Abstract. The revised section was colored in blue.

2. The sentence of "We found that UC-MSCs may be successful alternatives to BM-MSCs for GVHD treatment" at the end of Introduction is inappropriate, because it is a conclusion statement.

Response: Thank you for your comments. We agree that the sentence you have pointed out is inappropriate in the section of Introduction. Therefore, we removed the sentence from Introduction.

3. Giving general information in Results section such as "One function of MSCs is to differentiate into osteoblasts, chondrocytes, or adipocytes[20]" is inappropriate , which could be provided in Methods and Discussion

Response: Thank you for your comments. As you have pointed out, we removed the sentence from the Results section and moved to Methods section under the title of "Differentiation assay." The repositioned sentence is marked in blue color.

4. Repetitions of figures within paragraph in Discussion are inappropriate.

Response: Thank you for your comments. As you have suggested, we removed repetitions of figures in Discussion and reorganized some of the paragraphs.

1. No academic misconduct was found in the Bing search. However, the CrossCheck detection showed a high similarity to published articles (total 5%). The authors need to rephrase the repeated sentences.

Response: Thank you for your comments. As you have pointed out, we rephrased the repeated sentences that were detected in CorssCheck throughout the manuscript. Also, we have highlighted the changes in blue color.

2. The authors did not provide the approved grant application form(s). Please upload the approved grant application form(s) or funding agency copy of any approval document(s)

Response: I have uploaded the approved grant application form with the revised manuscript. Please check the uploaded file.

3. The authors did not provide original pictures. Please provide the original figure documents. Please prepare and arrange the figures using PowerPoint to ensure that all graphs or arrows or text portions can be reprocessed by the editor.

Response: I have uploaded the original pictures in forms of PowerPoint file with the revised manuscript. Please check the uploaded file.

4. PMID numbers are missing in the reference list. Please provide the PubMed numbers to the reference list and list all authors of the references. Please revise throughout.

Response: Thank you for your comments. As you have pointed out, we added PubMed numbers and all authors in the reference list. Added PMIDs are marked in blue color. The second reference listed on "Reference" did not have DOI, so DOI of reference #2 was omitted.

5. The "Article Highlights" section is missing. Please add the "Article Highlights" section at the end of the main text.

Response: Thank you for your comments. We added "Article Highlights" section at the end of the main text and before "References." Also, I have added "Footnotes" section stating IRB statement, IACUC statement, Conflict-of-interest, Data sharing statement, ARRIVE guidelines statement, and Open-Access after "References" section and before "Figure Legends."

1. Please provide the decomposable figure of Figures, whose parts are movable and editable. So you can put the original pictures in ppt and submit it in the system. Please provide the decomposable figure of all the figures, whose parts are all movable and editable, organize them into a PowerPoint file, and submit as "Manuscript No. - image files.ppt" on the system. Make sure that the layers in the PPT file are fully editable. For figures, use distinct colors with comparable visibility and consider colorblind individuals by avoiding the use of red and green for contrast. Please read these four important

guidelines carefully and modify your figure(s) accordingly: First, all submitted figures, including the text contained within the figures, must be editable. Please provide the text in your figure(s) in text boxes. Second, for line drawings that were automatically generated with software, please provide the labels/values of the ordinate and abscissa in text boxes. Third, please prepare and arrange the figures using PowerPoint to ensure that all graphs or text portions can be reprocessed by the editor. Fourth, in consideration of color-blind readers, please avoid using red and green for contrast in vector graphics or images.

Response: Thank you for your comments. We reorganized all figures, whose text parts are all movable and editable, into a PowerPoint file. All text parts were provided in text boxes including the values of the ordinate and abscissa.

2. Please explain all the abbreviations of each figure/table under each piece of figure/table legends. Please don't include any \*, #, ...in your manuscript; Please use superscript numbers for illustration; and for statistical significance, please use superscript letters. Statistical significance is expressed as  $aP < 0.05$ ,  $bP < 0.01$  ( $P > 0.05$  usually does not need to be denoted). If there are other series of P values,  $cP < 0.05$  and  $dP < 0.01$  are used, and a third series of P values is expressed as  $eP < 0.05$  and  $fP < 0.01$ .

Response: Thank you for your comments. We added explanation of all the abbreviations of each figure under each piece of figure legends. The text of added parts are marked in blue color. Also, statistical significance was changed according to the guidelines.