

PEER-REVIEW REPORT

Name of journal: *World Journal of Stem Cells*

Manuscript NO: 91531

Title: Interplay between mesenchymal stem cells and macrophages: Promoting bone tissue repair

Provenance and peer review: Invited manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 05769914

Position: Peer Reviewer

Academic degree: PhD, MD

Professional title: Professor, Researcher, Doctor

Reviewer's Country/Territory: Mexico

Author's Country/Territory: China

Manuscript submission date: 2023-12-30

Reviewer chosen by: AI Technique

Reviewer accepted review: 2024-01-01 01:34

Reviewer performed review: 2024-01-09 03:20

Review time: 8 Days and 1 Hour

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input checked="" type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Novelty of this manuscript	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No novelty
Creativity or innovation of this manuscript	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No creativity or innovation

Scientific significance of the conclusion in this manuscript	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Good <input checked="" type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No scientific significance
Language quality	<input type="checkbox"/> Grade A: Priority publishing <input checked="" type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
Conclusion	<input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input checked="" type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Re-review	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Peer-reviewer statements	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous
	Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

Here are my comments related to the manuscript entitled “Interplay between mesenchymal stem cells and macrophages: promoting bone tissue repair” by Feifan Zhang et al. The manuscript is interesting and I have some comments that should be addressed before publication. -The authors should check the journal format to properly restructure this manuscript. See below, for example, the discussion section is not necessary. In fact, the discussion section should be replaced by a Future perspectives and challenges section. -In addition, some words in the manuscript have grammatical errors. Please review the writing. -Several inappropriate references are cited or some are missing from the manuscript. For instance: 1. “and the immune response to tissue damage determines the speed and outcome of tissue healing[1].” In this phrase another reference is needed to support all the information in the phrase. 2. “On these bases, the osteogenesis mediated by MSCs bone homeostasis and bone remodeling together.” The reference is missing here. 3. “They also promote bone tissue formation by secreting bone morphogenetic protein-2 (BMP-2) and other osteogenic marker proteins[9].” The reference 9 does not contain information related to BMP-2. Please add the appropriate

reference. 4. "THE ROLES OF MSCs TO MACROPHAGES". This section should have its references, respectively. 5. "MSCs express various bioactive factors such as vascular endothelial growth factor-A (VEGF-A), PGE2, and NO through exosomes, which may promote macrophages recruitment by endocytosis[14]." The reference 14 does not contain information related to VEGF-A, PGE2, and NO. Please add the appropriate reference. 6. ".....such as secreting hepatocyte growth factor (HGF) and IDO to inhibit T cell proliferation and induce T cell apoptosis[5,36]." The reference 5 belongs to an article original, but IDO acronym is only cited in this reference. Please add the appropriate reference. 7. "M2 macrophages secrete anti-inflammatory factors such as IL-4, IL-10, and TGF- β to prevent excessive activation of inflammatory responses[40]." The reference 40 does not contain information related to TGF- β . Please add another one. 8. "The phosphorylated STAT3 translocates to the nucleus, where it activates the expression of RANKL, osteoclast differentiation through its action on TNF- α [68]." The reference 68 is not appropriate for the phrase. Please add the appropriate one. 9. "L-4 inhibits the transcription factor NFATc1, weakening RANKL-induced OCs formation[33]." The reference 33 does not contain information related to NFATc1 and RANKL. Please add the appropriate one. 10. "IL-3 can also reduce the expression of c-fos, inhibit OCs formation, and bone absorption[70]." The reference 70 does not contain information related to IL-3 and c-fos. Please add the appropriate one. 11. ".....activating signal molecules drosophila mothers against decapentaplegic homologue (SMAD) in OBs to promote the osteogenic function of MSCs[68]." Please add another SMAD-related reference because reference 68 does not contain SMAD-related information. 12. "Denise Philipp et al discovered that the immunosuppressive effect of MSCs, thus significantly enhancing the immune regulatory capabilities of MSCs[40]." The reference 40 do not belong to Philipp. 13. "The depletion of macrophages can lead to a decrease in MSCs, M2 macrophages can promote MSCs osteogenic differentiation and

accelerate the bone repair." The reference is missing here. 14. "Formation of the basic multicellular unit for bone tissue" This heading should have its references, respectively. -Please cite as Chang et al. found that.....instead of Chang MK et al found that.... Apply to all authors cited in this way. -At the end of the following phrase: "Macrophages can secrete different active factors to regulate the immune microenvironment and affect the biological functions of MSCs through the polarization of their own phenotypes (Figure 1)." Please add the references which were considered to design the figure 1. In addition, the authors should change the words Polarization and Viability with downward orientation. -In the next phrase: "Chemokines were considered to be chemotactic agents for immune cells,....." Please change the verb were to verb are. -The following heading is a little confusing: "Mediate the phenotypic transformation of macrophages." Who mediate? The same situation for the next headings: "Mediate the immunomodulatory activity of MSCs.", "Regulate the differentiation of MSCs.", "THE ROLE OF BOTH IN THE PROCESS OF BONE TISSUE REPAIR". -Please define the acronym EVs in the next: "MSC-EVs can transfer miR-223-3p,....." -Please write matrix metalloproteinase 1 (MMP1) instead of matrix metallo proteinase 1 (MMP1). -At the end of the following phrase: "Due to the roles of macrophages in bone, cartilage, and fat formation, they are considered potential targets for the treatment of various related diseases such as bone defects, osteoarthritis, and vascular diseases (Figure 2)." Please add the references which were considered to design the figure 2. In addition, it is not clear which type of cells (red) secrete OPG, RUNX2, ALPL, etc (Name should be added). -The authors should review if it was correct to use the word absorption instead of the word resorption. For example: "Bone repair and remodeling are processes of "activation-absorption-formation"", "and participating in metabolism related to bone absorption and bone formation." The reference is also missing here. "RANKL serves as a bridge between the inflammatory response and bone absorption." Wherever

necessary. -I suggest designing a figure related to the header “Mesenchymal stem cells and macrophages in the process of bone tissue repair”. According to the information considered in the manuscript.

RE-REVIEW REPORT OF REVISED MANUSCRIPT

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Manuscript submission date: 2023-12-30

Reviewer chosen by: Jing-Jie Wang

Reviewer accepted review: 2024-02-22 03:51

Reviewer performed review: 2024-02-22 05:21

Review time: 1 Hour

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input checked="" type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Language quality	<input type="checkbox"/> Grade A: Priority publishing <input checked="" type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
Conclusion	<input type="checkbox"/> Accept (High priority) <input checked="" type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Peer-reviewer	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous



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statements

Conflicts-of-Interest: [] Yes [Y] No

SPECIFIC COMMENTS TO AUTHORS

I have no comments to authors, all suggestions were attended.