

## PEER-REVIEW REPORT

**Name of journal:** *World Journal of Stem Cells*

**Manuscript NO:** 75827

**Title:** How mesenchymal stem cells co-transplantation in hematopoietic stem cells can improve the engraftment in animal models

**Provenance and peer review:** Invited Manuscript; Externally peer reviewed

**Peer-review model:** Single blind

**Reviewer's code:** 05935626

**Position:** Peer Reviewer

**Academic degree:** MD

**Professional title:** Doctor

**Reviewer's Country/Territory:** Indonesia

**Author's Country/Territory:** Brazil

**Manuscript submission date:** 2022-03-15

**Reviewer chosen by:** AI Technique

**Reviewer accepted review:** 2022-03-19 04:56

**Reviewer performed review:** 2022-03-19 10:13

**Review time:** 5 Hours

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Very good <input 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 Grade E: Do not publish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 type="checkbox"/> Accept (General priority) <input checked="" type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Re-review	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No



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<b>Peer-reviewer statements</b>	Peer-Review: [ <input checked="" type="radio"/> ] Anonymous [ <input type="radio"/> ] Onymous Conflicts-of-Interest: [ <input type="radio"/> ] Yes [ <input checked="" type="radio"/> ] No
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### **SPECIFIC COMMENTS TO AUTHORS**

I would like to congratulate the authors for this manuscript. The study is interesting. I have some comments about the manuscript: In the abstract and introduction, the authors should clearly present the reason of conducting this study. The importance of this study, and what differs this study with previously done studies. The research question of this review is missing. Please add the clinical PICO question to be answered. Systematic Review articles summarize the recent and comprehensive published material on a particular subject, without bias. To avoid the susceptibility of bias, what did the authors do? please clarify. To assure the study won't give misleading results, do you use a tool or bias table? If so please clarify. Please explain briefly how do you determine the evidence level and state which guideline. In the discussion, please address the most important potential source of bias on your methodology and study limitations. Please give recommendation for future studies. Please provide biostatistics review certificate from external / independent biomedical statistician.

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**Peer-review model:** Single blind

**Reviewer's code:** 02446101

**Position:** Editorial Board

**Academic degree:** MD, PhD

**Professional title:** Professor, Surgeon

**Reviewer's Country/Territory:** China

**Author's Country/Territory:** Brazil

**Manuscript submission date:** 2022-03-15

**Reviewer chosen by:** AI Technique

**Reviewer accepted review:** 2022-03-17 15:01

**Reviewer performed review:** 2022-03-20 05:10

**Review time:** 2 Days and 14 Hours

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input checked="" type="checkbox"/> Grade E: Do not publish
Language quality	<input type="checkbox"/> Grade A: Priority publishing <input type="checkbox"/> Grade B: Minor language polishing <input checked="" 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 type="checkbox"/> Major revision <input checked="" type="checkbox"/> Rejection
Re-review	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

**Peer-reviewer  
statements**Peer-Review: [ ☒ ] Anonymous [ ☐ ] OnymousConflicts-of-Interest: [ ☐ ] Yes [ ☒ ] No**SPECIFIC COMMENTS TO AUTHORS**

The manuscript was designed to analyze the hematopoietic and mesenchymal stem cells characteristics and the several interactions through the co-transplantation in murine models. This is a very hot research area and there are a lot of research reports in recent years. It is clear that the authors had done a great deal of careful analysis of the researches in this field. Unfortunately, these analyses mostly confirm that there're still a lot of contradictory and ill-founded speculations on this topic. It is difficult to draw any meaningful conclusions from these studies. In addition, the authors focused the simply descriptions the studies and there's few necessary summaries and suggestions in this manuscript. To sum up, this manuscript cannot provide meaningful ideas for readers.

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**Provenance and peer review:** Invited Manuscript; Externally peer reviewed

**Peer-review model:** Single blind

**Reviewer's code:** 04861666

**Position:** Peer Reviewer

**Academic degree:** BSc, MSc, PhD

**Professional title:** Assistant Professor

**Reviewer's Country/Territory:** India

**Author's Country/Territory:** Brazil

**Manuscript submission date:** 2022-03-15

**Reviewer chosen by:** AI Technique

**Reviewer accepted review:** 2022-03-16 12:59

**Reviewer performed review:** 2022-03-21 12:06

**Review time:** 4 Days and 23 Hours

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 type="checkbox"/> Grade B: Minor language polishing <input checked="" 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 checked="" type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Re-review	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

<b>Peer-reviewer statements</b>	Peer-Review: [ <input type="checkbox"/> ] Anonymous [ <input checked="" type="checkbox"/> ] Onymous Conflicts-of-Interest: [ <input type="checkbox"/> ] Yes [ <input checked="" type="checkbox"/> ] No
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## SPECIFIC COMMENTS TO AUTHORS

The bone marrow transplantation is a standard procedure for the treatment of hematopoietic and non-hematopoietic diseases but still has several difficulties and obstacles in the failure of treatment. Keeping it in the mind, in the current review Garrigós et al have systemically reviewed the preclinical studies of MSCs and HSCs co-transplantation and demonstrated several aspects of the MSCs and HSCs transplantation process and showed the molecular and/or structural synergism aspects of co-transplantation which result in complete successful engraftment. Finally they have concluded that these preclinical findings validate the MSCs potential to enable HSCs engraftment in vivo in both xenogeneic and allogeneic HSCs animal models in the absence of toxicity. Approaches used by author is nice, presentation of the experimental outline is very clear. In my opinion it is nice screening of the works for the supporting the co-transplantation of MSCs along with HSCs for it better efficacy. As for the language of the manuscript is concern it is not easy to understand. Authors should use simple language to make manuscript more clear to the reader. I think it will be beneficial to the reader of World Journal of Stem cells and should be accepted for publication after minor language corrections.

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**Peer-review model:** Single blind

**Reviewer's code:** 02524651

**Position:** Peer Reviewer

**Academic degree:** MD

**Professional title:** Professor

**Reviewer's Country/Territory:** China

**Author's Country/Territory:** Brazil

**Manuscript submission date:** 2022-03-15

**Reviewer chosen by:** AI Technique

**Reviewer accepted review:** 2022-03-16 11:36

**Reviewer performed review:** 2022-03-21 13:01

**Review time:** 5 Days and 1 Hour

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Very good <input 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 type="checkbox"/> Accept (General priority) <input checked="" type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Re-review	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

<b>Peer-reviewer statements</b>	Peer-Review: [ <input checked="" type="checkbox"/> ] Anonymous [ <input type="checkbox"/> ] Onymous Conflicts-of-Interest: [ <input type="checkbox"/> ] Yes [ <input checked="" type="checkbox"/> ] No
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## SPECIFIC COMMENTS TO AUTHORS

The manuscript "How mesenchymal stem cells co-transplantation in hematopoietic stem cells can improve the engraftment in animal models" analyzes the hematopoietic and mesenchymal stem cells characteristics and the several interactions through the co-transplantation in murine models. A total of 18 original studies have been included. The chimerism, hematopoietic reconstitution, survival, homing and cellularity were evaluated. An improvement was concluded in the graft when HSC and MSC were administered concurrently. This review is designed well and provides valuable information for co-transplantation of HSC and MSC. 1, In discussion, the authors mentioned that "After searching original articles published between January 2011 and December 2021.....The majority of the papers were produced by Asian researchers and published between 2013 and 2016". Why did the trend of the related papers publication decrease in the period of 2016-2021? 2, The authors mentioned "The recent study by Huang and collaborators[15] was inconsistent with previous reports showing that UCB HSC are a source effective for HSC compared with other sources." Please give explanation on the "inconsistent". 3, please compare more information on the routes of IV versus IB. 4. regarding the limitation of this review, the authors mentioned "the mechanisms by which MSC perform their roles have not been explained clearly in the studies included in this review". I think more mechanism information is necessary to enrich this review.



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**Peer-review model:** Single blind

**Reviewer's code:** 05684808

**Position:** Peer Reviewer

**Academic degree:** MD

**Professional title:** Associate Chief Physician

**Reviewer's Country/Territory:** China

**Author's Country/Territory:** Brazil

**Manuscript submission date:** 2022-03-15

**Reviewer chosen by:** AI Technique

**Reviewer accepted review:** 2022-03-15 22:20

**Reviewer performed review:** 2022-03-21 20:55

**Review time:** 5 Days and 22 Hours

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Very good <input 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 checked="" type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Re-review	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No



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<b>Peer-reviewer statements</b>	Peer-Review: [ <input checked="" type="checkbox"/> ] Anonymous [ <input type="checkbox"/> ] Onymous Conflicts-of-Interest: [ <input type="checkbox"/> ] Yes [ <input checked="" type="checkbox"/> ] No
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### **SPECIFIC COMMENTS TO AUTHORS**

1. Please add the results of ongoing clinical trials in the prospective section; 2. Please included the limitation of this study.