



PEER-REVIEW REPORT

Name of journal: *World Journal of Stem Cells*

Manuscript NO: 86091

Title: Integrin beta 3-overexpressing mesenchymal stromal cells display enhanced homing and can reduce atherosclerotic plaque

Provenance and peer review: Unsolicited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 03372482

Position: Editorial Board

Academic degree: MD, PhD

Professional title: Academic Research, Assistant Professor, Associate Professor

Reviewer's Country/Territory: Egypt

Author's Country/Territory: China

Manuscript submission date: 2023-05-31

Reviewer chosen by: AI Technique

Reviewer accepted review: 2023-06-02 08:20

Reviewer performed review: 2023-06-02 08:28

Review time: 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 Grade E: Do not publish
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 checked="" type="checkbox"/> Grade B: Good <input 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 checked="" 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
Peer-reviewer statements	Peer-Review: <input type="checkbox"/> Anonymous <input checked="" type="checkbox"/> Onymous
	Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

In General: it's a good paper and the subject of the manuscript is applicable and useful.

Title: the title properly explains the purpose and objective of the article Abstract: abstract contains an appropriate summary for the article, the language used in the abstract is easy to read and understand, and there are no suggestions for improvement.

Introduction: authors do provide adequate background on the topic and reason for this article and describe what the authors hoped to achieve. MATERIALS AND METHODS:

- The variables selected for the study are described clearly and are appropriate, given the nature of the question asked.
- The research design is described in detail.
- The research design is appropriate and does not contain particular weaknesses.
- The measurement instrument, including its psychometric qualities, is described clearly.
- The population of interest and the sampling procedure are defined clearly.
- The data collection procedure is clearly described.
- The setting in which the study took place is described.
- The data analysis procedures are stated in precise terms.
- The data analysis procedures are appropriate.

Results: the results are presented clearly, the authors provide accurate research results, and there is sufficient evidence for each result,



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Specific data accompany the result statement, and Tables and figures are used efficiently.

Conclusion: in general: Good and the research provides sample data for the authors to make their conclusion. Grammar: There are a lot of grammatical errors. This must be taken care of and addressed. Finally, this was an attractive article. In its current state, it adds much new insightful information to the field. Therefore, I accept that paper to be published in your journal.



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Name of journal: *World Journal of Stem Cells*

Manuscript NO: 86091

Title: Integrin beta 3-overexpressing mesenchymal stromal cells display enhanced homing and can reduce atherosclerotic plaque

Provenance and peer review: Unsolicited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 06131948

Position: Peer Reviewer

Academic degree: PhD

Professional title: Doctor, Teacher

Reviewer's Country/Territory: Russia

Author's Country/Territory: China

Manuscript submission date: 2023-05-31

Reviewer chosen by: AI Technique

Reviewer accepted review: 2023-06-02 13:42

Reviewer performed review: 2023-06-03 11:27

Review time: 21 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
Novelty of this manuscript	<input checked="" type="checkbox"/> Grade A: Excellent <input 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



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Scientific significance of the conclusion in 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 scientific significance
Language quality	<input checked="" type="checkbox"/> Grade A: Priority publishing <input 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
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

This interesting study is about finding new directions for the therapy of atherosclerosis. The study has a reasonable and understandable design and is performed using adequate research methods. The article is well illustrated with figures, which increases the clarity of the findings. The discussion covers the study well and contains sufficient references to the literature.



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Title: Integrin beta 3-overexpressing mesenchymal stromal cells display enhanced homing and can reduce atherosclerotic plaque

Provenance and peer review: Unsolicited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 04213605

Position: Peer Reviewer

Academic degree: BSc

Professional title: Teaching Assistant

Reviewer's Country/Territory: Singapore

Author's Country/Territory: China

Manuscript submission date: 2023-05-31

Reviewer chosen by: Geng-Long Liu

Reviewer accepted review: 2023-06-08 03:48

Reviewer performed review: 2023-06-11 04:05

Review time: 3 Days

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input type="checkbox"/> Grade C: Good <input checked="" type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Novelty of 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 novelty
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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 type="checkbox"/> Major revision <input checked="" 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

Some experiments are not conducted correctly. Please provide raw western blot images for the reviewers to check.



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Name of journal: *World Journal of Stem Cells*

Manuscript NO: 86091

Title: Integrin beta 3-overexpressing mesenchymal stromal cells display enhanced homing and can reduce atherosclerotic plaque

Provenance and peer review: Unsolicited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 03712811

Position: Editor-in-Chief

Academic degree: MD, PhD

Professional title: Director, Full Professor

Reviewer's Country/Territory: Italy

Author's Country/Territory: China

Manuscript submission date: 2023-05-31

Reviewer chosen by: Geng-Long Liu

Reviewer accepted review: 2023-06-08 08:59

Reviewer performed review: 2023-06-13 12:26

Review time: 5 Days and 3 Hours

Scientific quality	<input checked="" 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 type="checkbox"/> Grade E: Do not publish
Novelty of this manuscript	<input checked="" type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No novelty
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Scientific significance of the conclusion in this manuscript	<input checked="" type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No scientific significance
Language quality	<input checked="" type="checkbox"/> Grade A: Priority publishing <input 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 type="checkbox"/> Yes <input checked="" 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

In this study, the Authors aimed at enhancing the migratory activity and homing of human umbilical cord-derived mesenchymal stem cells (MSCs) towards atherosclerotic vascular sites in apolipoprotein E-/- (ApoE-/-) mice fed a high-fat diet (HFD). For this purpose, they transduced hMSCs with a lentiviral vector encoding the integrin beta 3 receptor (ITGB3), and/or GFP. The Authors provided compelling evidence that the genetically modified MSCs targeted atherosclerotic plaques in vivo following intravenous injection in HFD ApoE-/-mice, significantly reducing, and counteracting the progression of the plaque area. This strategy also led to a decrease in the local inflammatory response, while eliciting an anti-inflammatory associated tissue rescue. The in vivo data were corroborated by in vitro evidence that MSC-ITGB3 remarkably enhanced their migration towards inflammatory sites in vitro, as shown by in vitro transwell-based cell chemotaxis assay, containing in the bottom chamber either TNF-alpha-treated mouse macrophages, or mouse atherosclerotic aorta samples. The presented results entail remarkable novelty and biomedical implication. The methods used are rigorous, and the Discussion section is in keeping with the experimental



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findings, also highlighting the study limitations, and specifying the needs for subsequent steps aimed at tracing the target location and lifespan of MSCs-ITGB3 through in vivo imaging technology.



RE-REVIEW REPORT OF REVISED MANUSCRIPT

Name of journal: *World Journal of Stem Cells*

Manuscript NO: 86091

Title: Integrin beta 3-overexpressing mesenchymal stromal cells display enhanced homing and can reduce atherosclerotic plaque

Provenance and peer review: Unsolicited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 04213605

Position: Peer Reviewer

Academic degree: BSc

Professional title: Teaching Assistant

Reviewer's Country/Territory: Singapore

Author's Country/Territory: China

Manuscript submission date: 2023-05-31

Reviewer chosen by: Jia-Ru Fan

Reviewer accepted review: 2023-06-25 11:28

Reviewer performed review: 2023-06-25 11:30

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 checked="" type="checkbox"/> Grade A: Priority publishing <input 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

Accept.