



**Baishideng
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PEER-REVIEW REPORT

Name of journal: World Journal of Stem Cells

Manuscript NO: 46953

Title: Suitability and limitations of mesenchymal stem cells to elucidate human bone illness

Reviewer's code: 03550634

Reviewer's country: India

Science editor: Ying Dou

Reviewer accepted review: 2019-05-15 01:41

Reviewer performed review: 2019-05-16 18:44

Review time: 1 Day and 17 Hours

SCIENTIFIC QUALITY	LANGUAGE QUALITY	CONCLUSION	PEER-REVIEWER STATEMENTS
<input type="checkbox"/> Grade A: Excellent	<input type="checkbox"/> Grade A: Priority publishing	<input type="checkbox"/> Accept	Peer-Review:
<input type="checkbox"/> Grade B: Very good	<input type="checkbox"/> Grade B: Minor language	(High priority)	<input type="checkbox"/> Anonymous
<input type="checkbox"/> Grade C: Good	polishing	<input type="checkbox"/> Accept	<input type="checkbox"/> Onymous
<input type="checkbox"/> Grade D: Fair	<input type="checkbox"/> Grade C: A great deal of	(General priority)	Peer-reviewer's expertise on the
<input type="checkbox"/> Grade E: Do not	language polishing	<input type="checkbox"/> Minor revision	topic of the manuscript:
publish	<input type="checkbox"/> Grade D: Rejection	<input type="checkbox"/> Major revision	<input type="checkbox"/> Advanced
		<input type="checkbox"/> Rejection	<input type="checkbox"/> General
			<input type="checkbox"/> No expertise
			Conflicts-of-Interest:
			<input type="checkbox"/> Yes
			<input type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

Authors are encouraged to go through minor comments and make changes suitably.

INITIAL REVIEW OF THE MANUSCRIPT



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PEER-REVIEW REPORT

Name of journal: World Journal of Stem Cells

Manuscript NO: 46953

Title: Suitability and limitations of mesenchymal stem cells to elucidate human bone illness

Reviewer's code: 03811054

Reviewer's country: Egypt

Science editor: Ying Dou

Reviewer accepted review: 2019-05-15 04:04

Reviewer performed review: 2019-05-18 09:20

Review time: 3 Days and 5 Hours

SCIENTIFIC QUALITY	LANGUAGE QUALITY	CONCLUSION	PEER-REVIEWER STATEMENTS
<input type="checkbox"/> Grade A: Excellent	<input type="checkbox"/> Grade A: Priority publishing	<input type="checkbox"/> Accept	Peer-Review:
<input type="checkbox"/> Grade B: Very good	<input checked="" type="checkbox"/> Grade B: Minor language	(High priority)	<input checked="" type="checkbox"/> Anonymous
<input checked="" type="checkbox"/> Grade C: Good	polishing	<input type="checkbox"/> Accept	<input type="checkbox"/> Onymous
<input type="checkbox"/> Grade D: Fair	<input type="checkbox"/> Grade C: A great deal of	(General priority)	Peer-reviewer's expertise on the
<input type="checkbox"/> Grade E: Do not	language polishing	<input checked="" type="checkbox"/> Minor revision	topic of the manuscript:
publish	<input type="checkbox"/> Grade D: Rejection	<input type="checkbox"/> Major revision	<input checked="" type="checkbox"/> Advanced
		<input type="checkbox"/> Rejection	<input type="checkbox"/> General
			<input type="checkbox"/> No expertise
			Conflicts-of-Interest:
			<input type="checkbox"/> Yes
			<input checked="" type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

The manuscript is worthy of publication, and it has been carefully written only from a minor linguistic and grammatical errors, which the researcher/s should review well before publication.



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PEER-REVIEW REPORT

Name of journal: World Journal of Stem Cells

Manuscript NO: 46953

Title: Suitability and limitations of mesenchymal stem cells to elucidate human bone illness

Reviewer's code: 01213075

Reviewer's country: Taiwan

Science editor: Ying Dou

Reviewer accepted review: 2019-05-15 13:03

Reviewer performed review: 2019-05-20 19:43

Review time: 5 Days and 6 Hours

SCIENTIFIC QUALITY	LANGUAGE QUALITY	CONCLUSION	PEER-REVIEWER STATEMENTS
<input type="checkbox"/> Grade A: Excellent	<input type="checkbox"/> Grade A: Priority publishing	<input type="checkbox"/> Accept	Peer-Review:
<input type="checkbox"/> Grade B: Very good	<input checked="" type="checkbox"/> Grade B: Minor language	(High priority)	<input checked="" type="checkbox"/> Anonymous
<input checked="" type="checkbox"/> Grade C: Good	polishing	<input type="checkbox"/> Accept	<input type="checkbox"/> Onymous
<input type="checkbox"/> Grade D: Fair	<input type="checkbox"/> Grade C: A great deal of	(General priority)	Peer-reviewer's expertise on the
<input type="checkbox"/> Grade E: Do not	language polishing	<input checked="" type="checkbox"/> Minor revision	topic of the manuscript:
publish	<input type="checkbox"/> Grade D: Rejection	<input type="checkbox"/> Major revision	<input type="checkbox"/> Advanced
		<input type="checkbox"/> Rejection	<input checked="" type="checkbox"/> General
			<input type="checkbox"/> No expertise
			Conflicts-of-Interest:
			<input type="checkbox"/> Yes
			<input checked="" type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

Summary: This manuscript reported a review on the suitability and limitations of mesenchymal stem cells to elucidate human bone illness. The main contents included the socio-economic impact of bone diseases, advantages and flaws of animal models of bone

diseases, mesenchymal stem cells as experimental human (bone) disease models, mesenchymal stem cells as therapeutic tools for bone diseases, etc. The authors discussed the human MSCs (hMSCs) emerge as a suitable tool to study the etiology of bone disorders at the cellular level, as well as to be use with cell therapy purposes for bone diseases. They focused on the most relevant findings using hMSCs as an in vitro cell model to unravel pathological bone mechanisms and the application and outcomes of hMSCs in cell therapy clinical trials for bone disease. The authors also listed certain limitations of animal models for the study of bone disorders highlight the suitability and benefits of hMSCs for the elucidation of these pathologies. They intended to explain the available strategies based on hMSCs for bone illness new treatments development and future directions in the field for a more accurate knowledge of the cause underlying these human pathologies. This review may need to address some more issues before being considered for publication.

1. Some contents are redundant (e.g., socio-economic impact of bone diseases section), and some are irrelevant (e.g., osteomyelitis model, lines 204-217). The authors may need to focus on the topic.
2. MSCs are mixture population of cells in various differentiation stages which may influence the physiological functions. The characterization of MSCs is needed. Will it influence the suitability as research models for different diseases?
3. The authors discussed some advances in using MSCs for therapeutic purposes, indicating the relevance of MSC in addressing bone disorders. However, MSCs models are cellular level models. More limitations and clinical relevance studies are needed for different diseases.
4. The animal models can provide more information of bone remodeling and interaction between osteoblasts and osteoclasts. How can MSCs overcome this limitation?
5. The mechanisms of cytokines and extracellular matrices on MSCs are not mentioned. They are important domains.
6. To make it more clear for reading, the authors may need to tabulate the contents about MSCs models, listing its own advantages and limitations for



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each application. 7. The authors may also need to provide some suggestion for the improvement of MSCs models.

INITIAL REVIEW OF THE MANUSCRIPT

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PEER-REVIEW REPORT

Name of journal: World Journal of Stem Cells

Manuscript NO: 46953

Title: Suitability and limitations of mesenchymal stem cells to elucidate human bone illness

Reviewer's code: 02446226

Reviewer's country: Japan

Science editor: Ying Dou

Reviewer accepted review: 2019-05-16 09:00

Reviewer performed review: 2019-05-25 07:04

Review time: 8 Days and 22 Hours

SCIENTIFIC QUALITY	LANGUAGE QUALITY	CONCLUSION	PEER-REVIEWER STATEMENTS
<input type="checkbox"/> Grade A: Excellent	<input type="checkbox"/> Grade A: Priority publishing	<input type="checkbox"/> Accept	Peer-Review:
<input type="checkbox"/> Grade B: Very good	<input type="checkbox"/> Grade B: Minor language	(High priority)	<input type="checkbox"/> Anonymous
<input checked="" type="checkbox"/> Grade C: Good	polishing	<input type="checkbox"/> Accept	<input type="checkbox"/> Onymous
<input type="checkbox"/> Grade D: Fair	<input type="checkbox"/> Grade C: A great deal of	(General priority)	Peer-reviewer's expertise on the
<input type="checkbox"/> Grade E: Do not	language polishing	<input checked="" type="checkbox"/> Minor revision	topic of the manuscript:
publish	<input type="checkbox"/> Grade D: Rejection	<input type="checkbox"/> Major revision	<input type="checkbox"/> Advanced
		<input type="checkbox"/> Rejection	<input checked="" type="checkbox"/> General
			<input type="checkbox"/> No expertise
			Conflicts-of-Interest:
			<input type="checkbox"/> Yes
			<input checked="" type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

The manuscript was generally well written because the author covered the various bone diseases, and basic study such as animal models and human experimental disease models. However, non-union after fractures can be intractable in some cases, and major



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clinical problem for orthopedic surgeons. So, I recommend the author to add a topic for non-union of bones, and its animal model and treatments using cell therapy.

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