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Flat C, 23/F., Lucky Plaza,
315-321 Lockhart Road, Wan Chai, Hong Kong, China

ESPS Peer-review Report

Name of Journal: World Journal of Stem Cells

ESPS Manuscript NO: 6796

Title: Mesenchymal stem cells: potential role in corneal wound repair and transplantation

Reviewer code: 00631847

Science editor: Song, Xiu-Xia

Date sent for review: 2013-10-30 11:10

Date reviewed: 2013-11-19 12:35

CLASSIFICATION	LANGUAGE EVALUATION	RECOMMENDATION	CONCLUSION
<input type="checkbox"/> Grade A (Excellent)	<input type="checkbox"/> Grade A: Priority Publishing	Google Search:	<input type="checkbox"/> Accept
<input type="checkbox"/> Grade B (Very good)	<input checked="" type="checkbox"/> Grade B: minor language polishing	<input type="checkbox"/> Existed	<input checked="" type="checkbox"/> High priority for publication
<input checked="" type="checkbox"/> Grade C (Good)	<input type="checkbox"/> Grade C: a great deal of language polishing	<input type="checkbox"/> No records	<input type="checkbox"/> Rejection
<input type="checkbox"/> Grade D (Fair)		BPG Search:	<input type="checkbox"/> Minor revision
<input type="checkbox"/> Grade E (Poor)	<input type="checkbox"/> Grade D: rejected	<input type="checkbox"/> Existed	<input type="checkbox"/> Major revision
		<input type="checkbox"/> No records	

COMMENTS TO AUTHORS

This is a comprehensive mini-review concerning the beneficial effect of administration of mesenchymal stem cells to augment the success of corneal transplant ions. This review focused on effect of immunomodulation of mesenchymal stem cells related to engraftment of cornea. Except for some mistakes in words spelling, this review is well written and it should be published.

ESPS Peer-review Report

Name of Journal: World Journal of Stem Cells

ESPS Manuscript NO: 6796

Title: Mesenchymal stem cells: potential role in corneal wound repair and transplantation

Reviewer code: 02398400

Science editor: Song, Xiu-Xia

Date sent for review: 2013-10-30 11:10

Date reviewed: 2013-11-26 00:29

CLASSIFICATION	LANGUAGE EVALUATION	RECOMMENDATION	CONCLUSION
<input type="checkbox"/> Grade A (Excellent)	<input type="checkbox"/> Grade A: Priority Publishing	Google Search:	<input type="checkbox"/> Accept
<input type="checkbox"/> Grade B (Very good)	<input type="checkbox"/> Grade B: minor language polishing	<input type="checkbox"/> Existed	<input type="checkbox"/> High priority for publication
<input type="checkbox"/> Grade C (Good)	<input type="checkbox"/> Grade C: a great deal of language polishing	<input type="checkbox"/> No records	<input type="checkbox"/> Rejection
<input type="checkbox"/> Grade D (Fair)	<input type="checkbox"/> Grade D: rejected	<input type="checkbox"/> Existed	<input type="checkbox"/> Minor revision
<input type="checkbox"/> Grade E (Poor)		<input type="checkbox"/> No records	<input type="checkbox"/> Major revision

COMMENTS TO AUTHORS

The manuscript by Li and Zhao describes the potential use of MSC-based therapies for the treatment of corneal injuries. The authors provide a clear, concise and comprehensive review of the field. Despite some minor concerns, the review is viewed favorably and is believed to represent a valuable contribution to the field. Major concerns

1. The manuscript requires editing for English grammar.
2. The authors clearly outline the current limitations of existing therapies for treating corneal wounds/disease, and build a sound argument for the potential application of MSCs for enhancing healing/regeneration of corneal tissue.
3. The authors provide a fairly comprehensive overview of the literature, but should at times provide a more critical appraisal of the cited work. For example, the authors state that "In addition, the cells from the corneal limbal stroma possess immune privilege" and cite Garfias Y, et al. Mol Vis 2012; 18:2087-2095. However, it is clear from review of this paper that the immuno-suppressive potential of L-MSCs is far weaker than compared to MSCs derived from bone marrow, achieving a modest 10-20% reduction in T cell proliferation at a 1:2 ratio of L-MSC:PBMC. Therefore, the unqualified statement made by the authors gives the impression that corneal limbal stromal MSCs are similar to bone marrow-derived MSCs, which does not appear to be the case.
4. Under "Role and Mechanisms of MSCs in Corneal Wound Repair" the authors state that marrow-derived MSCs are one "major" cell population that participates in wound repair. I do not believe this statement is accurate. Several studies indicate MSCs can home to sites of tissue damage, but whether they constitute a "major" repair pathway is debatable. Most papers show a modest contribution of MSCs to the wound repair process. In fact, the authors provide a comprehensive overview of MSC homing to corneal wounds in the following section, where they

state that “MSCs are found with a low frequency in sties of tissue damage.” Therefore, they should qualify their opening remarks to better reflect the cited literature in the following paragraphs.

5. The section on “Differentiation into corneal tissue” is well described and provides a clear understanding of the current advances in the field. 6. The descriptions of MSC paracrine function are well balanced and comprehensive, and the authors do a great job in summarizing the current status of the field. 7. In the cited reference Jia et al. Exp Eye Res 2012; 102:44-49, the authors state that “postoperative infusion of MSCs inhibited corneal allograft rejection and prolonged corneal graft survival, while preoperative infusion was ineffective.” In fact, pre-operative administration of MSCs combined with a low dose CsA therapy accelerated graft rejection compared with postoperative MSC therapy alone and even vehicle treatment. This is an important distinction as it indicates that MSC therapy is not always beneficial but under certain circumstances may exacerbate disease. The authors should clearly point out this limitation. It would also be very useful to comment on whether any studies show a dose response for MSC therapy. Few if any studies have shown dose-dependent effects, which is troublesome and suggests mechanism of action unclear.

Minor comments 1. In the last sentence of the paragraph “Characterization of MSCs” two sets of citations are provided – one as a superscript (23, 24) and one as plain text (66, 67). The wrongly cited and stylized references should be removed.



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ESPS Peer-review Report

Name of Journal: World Journal of Stem Cells

ESPS Manuscript NO: 6796

Title: Mesenchymal stem cells: potential role in corneal wound repair and transplantation

Reviewer code: 00504835

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CLASSIFICATION	LANGUAGE EVALUATION	RECOMMENDATION	CONCLUSION
<input type="checkbox"/> Grade A (Excellent)	<input type="checkbox"/> Grade A: Priority Publishing	Google Search:	<input type="checkbox"/> Accept
<input type="checkbox"/> Grade B (Very good)	<input type="checkbox"/> Grade B: minor language polishing	<input type="checkbox"/> Existed	<input type="checkbox"/> High priority for publication
<input type="checkbox"/> Grade C (Good)	<input type="checkbox"/> Grade C: a great deal of language polishing	<input type="checkbox"/> No records	<input type="checkbox"/> Rejection
<input type="checkbox"/> Grade D (Fair)	<input type="checkbox"/> Grade D: rejected	<input type="checkbox"/> Existed	<input type="checkbox"/> Minor revision
<input type="checkbox"/> Grade E (Poor)		<input type="checkbox"/> No records	<input type="checkbox"/> Major revision

COMMENTS TO AUTHORS

The manuscript needs major language editing. Numerous typos and grammatical errors throughout the text are evident. Since MSCs are known to abundantly secrete VEGF, the potential risk of corneal vascularization after cell transplantation warrants discussion. p4: "Migrating to the damaged tissue is a prerequisite for MSCs to exert therapeutic effects in the target tissue." This statement is not true. MSCs can exert therapeutic effects through remote paracrine actions.



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ESPS Peer-review Report

Name of Journal: World Journal of Stem Cells

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Title: Mesenchymal stem cells: potential role in corneal wound repair and transplantation

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CLASSIFICATION	LANGUAGE EVALUATION	RECOMMENDATION	CONCLUSION
<input type="checkbox"/> Grade A (Excellent)	<input type="checkbox"/> Grade A: Priority Publishing	Google Search:	<input type="checkbox"/> Accept
<input type="checkbox"/> Grade B (Very good)	<input type="checkbox"/> Grade B: minor language polishing	<input type="checkbox"/> Existed	<input type="checkbox"/> High priority for publication
<input type="checkbox"/> Grade C (Good)	<input type="checkbox"/> Grade C: a great deal of language polishing	<input type="checkbox"/> No records	<input type="checkbox"/> Rejection
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<input type="checkbox"/> Grade E (Poor)		<input type="checkbox"/> No records	<input type="checkbox"/> Major revision

COMMENTS TO AUTHORS

This is a comprehensive review on the potential role of mesenchymal stem cells in corneal wound repair and transplantation. The authors described the potential sources of MSCs, mechanisms of MSC in corneal repair and the roles of MSC in corneal transplantation. Generally, a well written review. There are a few minor grammatical errors. The sentence in introduction, 2nd paragraph was not clear. Studies have demonstrated human bone marrow MSCs had heterogeneity which related to differentiation potential of MSCs. Is the heterogeneity in relation to types of MSC or surface markers? In the same sentence, there was 2 citations given, one in superscript and the other normal font. This has to be sorted out.