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ESPS Peer-review Report
Name of Journal: World Journal of Stem Cells
ESPS Manuscript NO: 8404
Title: Adipose-derived mesenchymal stromal/stem cells: An update on their phenotype in vivo and in vitro
Reviewer code: 02445937
Science editor: Huan-Huan Zhai
Date sent for review: 2014-01-06 10:05
Date reviewed: 2014-02-14 07:26

CLASSIFICATION	LANGUAGE EVALUATION	RECOMMENDATION	CONCLUSION
[Y] Grade A (Excellent)	[Y] Grade A: Priority Publishing	Google Search:	[ ] Accept
[ ] Grade B (Very good)	[ ] Grade B: minor language polishing	[ ] Existed	[ ] High priority for publication
[ ] Grade C (Good)	[ ] Grade C: a great deal of language polishing	[ ] No records	
[ ] Grade D (Fair)		BPG Search:	[ ]Rejection
[ ] Grade E (Poor)	[ ] Grade D: rejected	[ ] Existed	[Y] Minor revision
		[ ] No records	[ ] Major revision

COMMENTS TO AUTHORS

The review article discusses the most recent findings concerning Adipose-derives stem cells. This review article is well-written, and the reviewer has only a few minor comments below. 1: In page 7, the author abbreviates smooth muscle actin as smA, and the reviewer would like to make sure that the author wants to abbreviate it as such, not as SMA, which is the common abbreviation. 2: In page 11, is "CD" missing in "haematopoietic stem-like cells (34+/45+)"? 3: In page 15, is the abbreviation "aSC" correct? NOT "ASC"?

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Name of Journal: World Journal of Stem Cells
ESPS Manuscript NO: 8404
Title: Adipose-derived mesenchymal stromal/stem cells: An update on their phenotype in vivo and in vitro
Reviewer code: 02446073
Science editor: Huan-Huan Zhai
Date sent for review: 2014-01-06 10:05
Date reviewed: 2014-02-24 01:01

CLASSIFICATION	LANGUAGE EVALUATION	RECOMMENDATION	CONCLUSION
[Y] Grade A (Excellent)	[Y] Grade A: Priority Publishing	Google Search:	[Y] Accept
[ ] Grade B (Very good)	[ ] Grade B: minor language polishing	[ ] Existed	[ ] High priority for publication
[ ] Grade C (Good)	[ ] Grade C: a great deal of language polishing	[ ] No records	[ ]Rejection
[ ] Grade D (Fair)	[ ] Grade D: rejected	BPG Search:	[ ] Minor revision
[ ] Grade E (Poor)		[ ] Existed	[ ] Major revision
		[ ] No records	

COMMENTS TO AUTHORS
In this manuscript, the author has well updated the isolation, culture, both in vitro and in vivo phenotype characterization of adipose-derived mesenchymal stromal/stem cells. Overall, this is a nicely written review article on ASCs and this reviewer does not have further comment.

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Name of Journal: World Journal of Stem Cells
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Title: Adipose-derived mesenchymal stromal/stem cells: An update on their phenotype in vivo and in vitro
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Date sent for review: 2014-01-06 10:05
Date reviewed: 2014-02-24 05:37

CLASSIFICATION	LANGUAGE EVALUATION	RECOMMENDATION	CONCLUSION
[Y] Grade A (Excellent)	[Y] Grade A: Priority Publishing	Google Search:	[ ] Accept
[ ] Grade B (Very good)	[ ] Grade B: minor language polishing	[ ] Existed	[ ] High priority for publication
[ ] Grade C (Good)	[ ] Grade C: a great deal of language polishing	[ ] No records	[ ]Rejection
[ ] Grade D (Fair)	[ ] Grade D: rejected	BPG Search:	[Y] Minor revision
[ ] Grade E (Poor)		[ ] Existed	[ ] Major revision
		[ ] No records	

COMMENTS TO AUTHORS

The Ms. 8404 attempts to review literature on concerning ASCs' subpopulations, heterogeneity and culture standardization. The manuscript is well researched with 83 references and well written with clarity of subheadings dealing with critical questions and issues. As the field is chaotic in a phase of collecting data with limited knowledge on all these three issues, the author's insight , if offered, will be greatly appreciated. Some specific comments below may help the author revise for better logic flow of the intertwined narrative on ASCs' subpopulations, heterogeneity and culture standardization. Specific comment: 1. Rewrite the abstract to focus on the issues about ASCs' subpopulations, heterogeneity and culture standardization. The current form seems like an introduction. 2. Better revise with an intertwined narrative on ASCs' subpopulations, heterogeneity and culture standardization, which is inter-related. Schematic diagrams or tables may help the readability. 3. Definition of MSCs is as follows: 1) Culture definition - "MSCs are isolated by their capacity to adhere to cell culture plastic surfaces" (culture-pressured selection), and 2) marker expression - (positive for CD73, CD90, CD105, and negative for CD11b or CD14, CD19 or CD79?, CD34, CD45, and HLA-DR). While CD34+ is controversial, how can we define ASCs based on BM-MSCs or HSC? 4. Reconcile the followings, consider how we can sort them out. P.5: native ASC - CD45-/CD235a-/CD31-/CD34+ cells P.6 cultured ASCs are characterized as CD73+/CD90+/CD105+/CD44+/CD45-/CD31- cells p.6: the in vivo counterpart(s) of the ASC population(s). 5. What's the ASCs niche? In adipose? In perivascular? Or multiple niches? p.6: Any other biomarkers beside these ("CD34+/CD31- cells (ASCs) in a perivascular location using

immunofluorescence staining" "CD34+/CD31+ capillary endothelial cells)" can be used in the context of adipose? That's the main issue: If we can not define the ASC niche, we can not fine tune the culture method, and then we can not get the right ASCs in culture. 6. p.6: "This is a complicated attempt because no marker has been described recently which unambiguously identifies native ASCs." It's catch-22, what's solution? Your insight? 7. p13 – Well-written section "that single-cell-derived clonal MSC populations are also highly heterogeneous and contain undifferentiated stem/progenitors and lineage-restricted precursors with varying capacities to proliferate and differentiate" – Is it culture-driven or inherited? How can we sort it out? 7. P.16: "the lack of standardization in the isolation methods and culture protocols needs to be overcome in order to eliminate the significant variability in cell quality (if not solely based on donor-specific variabilities)." That's problematic in the field, what standard does the author propose? 9. A list of abbreviations used in text is appreciated.

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CLASSIFICATION	LANGUAGE EVALUATION	RECOMMENDATION	CONCLUSION
[ ] Grade A (Excellent)	[Y] Grade A: Priority Publishing	Google Search:	[Y] Accept
[Y] Grade B (Very good)	[ ] Grade B: minor language polishing	[ ] Existed	[ ] High priority for publication
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[ ] Grade E (Poor)	[ ] Grade D: rejected	[ ] Existed	[ ] Minor revision
		[ ] No records	[ ] Major revision

COMMENTS TO AUTHORS
This is a very interesting and well written review on the MSCs derived from adipose tissues. It is very clearly presented that the presence of CD34 marker on the ADMSCs is a questionable subject. Since the CD34+ cells are only present during the intitial stages of MSC separation, the problem may hinder the proper characterization of clinically applicable MSC preparations.