

## PEER-REVIEW REPORT

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

**Manuscript NO:** 65203

**Title:** Translational products of adipose tissue-derived mesenchymal stem cells: Bench to bedside applications

**Reviewer's code:** 05371994

**Position:** Peer Reviewer

**Academic degree:** DDS, PhD

**Professional title:** Academic Fellow, Academic Research, Attending Doctor, Doctor, Lecturer, Postdoctoral Fellow

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

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

**Manuscript submission date:** 2021-03-01

**Reviewer chosen by:** Jin-Lei Wang

**Reviewer accepted review:** 2021-04-14 13:51

**Reviewer performed review:** 2021-04-19 12:45

**Review time:** 4 Days and 22 Hours

<b>Scientific quality</b>	<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 Grade E: Do not publish
<b>Language quality</b>	<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
<b>Conclusion</b>	<input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input checked="" type="checkbox"/> Major revision <input type="checkbox"/> Rejection
<b>Re-review</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>Peer-reviewer</b>	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous

statements

Conflicts-of-Interest: [ ] Yes [Y] No

## SPECIFIC COMMENTS TO AUTHORS

The manuscript describes the biology, characteristics, immunology, and clinical applications of adipose-derived products, mostly of which have recent evidence to support. The authors have provided the utility of various adipose derivatives helps in the improvisation of the existing regenerative therapies and their associated biomedical applications. However, there are several questions that need to be supplied or explained.

1. I am a little confused about AD-MSCs and ADSCs. What are the differences of these two cells? The definition of "ADSCs" should be provided in the manuscript. 2. The authors mentioned in paragraph 3 of the "Introduction" section that "adipose tissue products in preclinical studies to promote the adipogenesis of stem cells". Is there any clinical trials or studies about the applications of adipose tissue products? 3. Is there any guideline or standard protocol on clinical applications of adipose derivatives? 4. The subsections of section "Derivatives and applications of adipose tissue" are in general very brief. Please give more details or examples of their clinical applications. 5. The authors mentioned in the section Adipose tissue biology, paragraph 1, that "the two types of adipose tissue defined are the white adipose tissue found in adults and the brown adipose tissue found in newborns". What is the difference between these two types of adipose tissue? 6. Some columns of Figure 1 are missing, such as vascular fragment. Also, CD4 cells are showed in Figure 1 but not mentioned in section "Adipose tissue biology", paragraph 2, why? 7. What is "HSCs" in section "Characterization of ADSCs", paragraph 3? 8. Textual: The last sentence in section "Characterization of ADSCs", paragraph 3, "CD34+ and CD34- pericytes sto be the identity of...".

## PEER-REVIEW REPORT

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

**Manuscript NO:** 65203

**Title:** Translational products of adipose tissue-derived mesenchymal stem cells: Bench to bedside applications

**Reviewer's code:** 03811591

**Position:** Peer Reviewer

**Academic degree:** BSc, PhD

**Professional title:** Research Associate

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

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

**Manuscript submission date:** 2021-03-01

**Reviewer chosen by:** Jin-Lei Wang

**Reviewer accepted review:** 2021-04-15 05:14

**Reviewer performed review:** 2021-04-25 06:20

**Review time:** 10 Days and 1 Hour

<b>Scientific quality</b>	<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
<b>Language quality</b>	<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
<b>Conclusion</b>	<input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input checked="" type="checkbox"/> Major revision <input type="checkbox"/> Rejection
<b>Re-review</b>	<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

## **SPECIFIC COMMENTS TO AUTHORS**

This manuscript reviews the potential applications of therapeutic products containing adipose tissue-derived mesenchymal stem cells (ADSCs) at clinical settings. The authors first provide an overview of adipose tissue biology. Characterization and immunomodulation ability of ADSCs are then discussed. The authors subsequently review the potential applications of adipose tissue and its derivatives at clinical settings. This manuscript is interesting. However, there are several comments that the authors need to address. 1. There are many existing reviews on ADSCs. The authors should discuss the importance of this review in the last paragraph of introduction. 2. ADSCs are also known to undergo multilineage differentiation and secrete bioactive factors and exosomes for promoting tissue repair and regeneration. These aspects should be briefly discussed before section "Derivatives and applications of adipose tissue". 3. The authors should discuss the challenges of using ADSCs directly in clinical applications. Does transplantation of adipose tissues containing ADSCs or administration of ADSC-derived exosomes overcome such challenges? 4. How does microfat grafting enhance therapeutic efficacy of ADSCs? 5. How does nanofat grafting improve therapeutic efficacy of ADSCs? 6. Do microvascular fragments (MVF) contain any ADSCs? This section should be removed if MVF do not contain ADSCs. 7. How does transplantation of stromal vascular fraction (SVF) increase therapeutic efficacy of ADSCs? 8. The following relevant works should be cited and discussed. - Biosafety and bioefficacy assessment of human mesenchymal stem cells: what do we know so far (2019) *Regenerative Medicine* 13(2): 219-232. - Adipose-derived stem cells: current applications and future directions in the regeneration of multiple tissues (2020) *Stem Cells International* 2020: 8810813.