

## PEER-REVIEW REPORT

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

**Manuscript NO:** 90788

**Title:** Self-assembly of differentiated dental pulp stem cells facilitates spheroid human dental organoid formation and prevascularization

**Provenance and peer review:** Unsolicited manuscript; Externally peer reviewed

**Peer-review model:** Single blind

**Reviewer's code:** 07915366

**Position:** Peer Reviewer

**Academic degree:** PhD

**Professional title:** Assistant Professor

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

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

**Manuscript submission date:** 2023-12-19

**Reviewer chosen by:** AI Technique

**Reviewer accepted review:** 2023-12-21 07:31

**Reviewer performed review:** 2024-01-02 10:18

**Review time:** 12 Days and 2 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 Grade E: Do not publish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 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

<b>Scientific significance of the conclusion in this manuscript</b>	<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
<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 checked="" type="checkbox"/> Minor revision <input 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

The complexity and variability of the tissue microenvironment at the site of injury, such as hypoxic lethality, inflammatory response, immune resistance and inadequate blood supply, leads to low survival rates and poor maturation rates of directed differentiation after stem cell transplantation, all of which limit the clinical application and promotion of stem cells. Although the construction of organoid models has outstanding advantages in terms of clinical application, it still faces a major challenge, namely the lack of model nourishment due to the absence of angiogenesis, which is the main dilemma for the in vitro application of such models. In recent years, numerous studies have investigated the relationship between angiogenesis and pulp regeneration. VEGFA was significantly enriched in the development of vascularized dental pulp organoids. The biomarkers FOXO1 and FGF2 were identified in the regulation of vascularized dental pulp organoids. This study is well designed. The authors demonstrated 3D self-assembly of adult stem cell- human dental pulp cells and endothelial cells into a novel type of spheroid-shaped dental pulp organoids in vitro, under the hypoxia and conditioned medium. The findings are very interesting, and well discussed. Comments: 1. The

manuscript requires a minor editing. Please take attention about the abbreviations. Please define the abbreviations when they first appear in the abstract and main text. 2. The images should be improved. Some of the words are too small in the images. 3. The reference list should be updated, and edited.