

PEER-REVIEW REPORT

Name of journal: *World Journal of Stem Cells*

Manuscript NO: 83772

Title: Single cell RNA sequencing reveals mesenchymal heterogeneity and critical functions of Cd271 in tooth development

Provenance and peer review: Unsolicited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 03560845

Position: Peer Reviewer

Academic degree: DSc, MD, PhD

Professional title: Chairman, Professor, Senior Research Fellow

Reviewer's Country/Territory: Russia

Author's Country/Territory: China

Manuscript submission date: 2023-02-09

Reviewer chosen by: AI Technique

Reviewer accepted review: 2023-02-23 07:07

Reviewer performed review: 2023-02-26 13:28

Review time: 3 Days and 6 Hours

Scientific quality	☐ Grade A: Excellent ☒ Grade B: Very good ☐ Grade C: Good ☐ Grade D: Fair ☐ Grade E: Do not publish
Novelty of this manuscript	☐ Grade A: Excellent ☐ Grade B: Good ☒ Grade C: Fair ☐ Grade D: No novelty
Creativity or innovation of this manuscript	☐ Grade A: Excellent ☒ Grade B: Good ☐ Grade C: Fair ☐ Grade D: No creativity or innovation

Scientific significance of the conclusion in this manuscript	☐ Grade A: Excellent ☒ Grade B: Good ☐ Grade C: Fair ☐ Grade D: No scientific significance
Language quality	☐ Grade A: Priority publishing ☒ Grade B: Minor language polishing ☐ Grade C: A great deal of language polishing ☐ Grade D: Rejection
Conclusion	☐ Accept (High priority) ☐ Accept (General priority) ☐ Minor revision ☒ Major revision ☐ Rejection
Re-review	☒ Yes ☐ No
Peer-reviewer statements	Peer-Review: ☒ Anonymous ☐ Onymous
	Conflicts-of-Interest: ☐ Yes ☒ No

SPECIFIC COMMENTS TO AUTHORS

The authors used the latest molecular biology methods to study the role of CD271 in the development of the facial skeleton bones and, as the title of the article states, tooth development. The authors used animals with cd271 gene knockout in their work. However, with such a powerful set of methods, the results are more than modest. The authors themselves point out in the introduction that the role of cd271 in neural crest cell function is key and is being actively studied. And as a consequence of this, it was obvious to expect some abnormalities when this gene was knocked out, which is what the authors got: a decrease in proliferative ability, and the ability to mineralize. Heterogeneity of MSCs has long been discussed in the literature, the authors again confirmed this conclusion. Among the MSCs the authors distinguished subpopulations of progenitor cells, osteoblasts and fibroblasts. What is new and surprising in this is not clear, because it is already known that from the MSCs that settle out of the neural crest, the connective tissues of the facial skeleton develop and it is quite expected that among morphologically similar cells there are already those that have entered different differentiation pathways. In this connection, the authors should analyze the obtained

data more deeply and clearly formulate what is the novelty of their study. By the way, what is the role of CD 271 in tooth development remains unclear to me.

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Peer-review model: Single blind

Reviewer's code: 03067229

Position: Peer Reviewer

Academic degree: DSc

Professional title: Research Scientist

Reviewer's Country/Territory: Russia

Author's Country/Territory: China

Manuscript submission date: 2023-02-09

Reviewer chosen by: Geng-Long Liu

Reviewer accepted review: 2023-03-19 04:45

Reviewer performed review: 2023-03-23 04:30

Review time: 3 Days and 23 Hours

Scientific quality	☒ Grade A: Excellent ☐ Grade B: Very good ☐ Grade C: Good ☐ Grade D: Fair ☐ Grade E: Do not publish
Novelty of this manuscript	☒ Grade A: Excellent ☐ Grade B: Good ☐ Grade C: Fair ☐ Grade D: No novelty
Creativity or innovation of this manuscript	☒ Grade A: Excellent ☐ Grade B: Good ☐ Grade C: Fair ☐ Grade D: No creativity or innovation

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Conclusion	☐ Accept (High priority) ☒ Accept (General priority) ☐ Minor revision ☐ Major revision ☐ Rejection
Re-review	☐ Yes ☒ No
Peer-reviewer statements	Peer-Review: ☒ Anonymous ☐ Onymous
	Conflicts-of-Interest: ☐ Yes ☒ No

SPECIFIC COMMENTS TO AUTHORS

There are no comments. The research can be interesting as it contains new fundamental knowledge.