

## PEER-REVIEW REPORT

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

**Manuscript NO:** 62696

**Title:** Therapeutic potential of periodontal ligament stem cells

**Reviewer's code:** 03670885

**Position:** Editorial Board

**Academic degree:** PhD

**Professional title:** Academic Research, Associate Professor, Research Scientist

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

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

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**Reviewer chosen by:** AI Technique

**Reviewer accepted review:** 2021-01-26 15:02

**Reviewer performed review:** 2021-01-29 00:27

**Review time:** 2 Days and 9 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 Grade E: Do not publish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 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

Aline Queiroz, Emmanuel Albuquerque-Souza, Letícia Miquelitto Gasparoni, Bruno Nunes de França, Cibele Pelissari, Marília Trierweiler, Marinella Holzhausen have submitted an interesting review titled "The Therapeutic Potential Of Periodontal Ligament Stem Cells: A Concise Review ". In my personal opinion it is a fluently written manuscript which provides enough information regarding of potential of periodontal ligament stem cells into regenerative medicine. However, I have few comments: 1. Authors have to review more about the characteristics of Embryonic Stem Cells and versus pluripotency versus phenotype, since I suggest that these concepts are not accurately addressed in the review and it can make confusion to the readers. 2. In the following paragraph, it is not true that MSC have pluripotency: "The periodontal ligament stem cells (PDLSCs), also known as periodontal ligament mesenchymal cells, are a unique cell population that are easily obtained and exhibit important characteristics of MSCs, such as self-renewal, pluripotency, and immunomodulation [13]" The MSC have multi plasticity cell differentiation potential, but they are not able to induce cell differentiation to all cells of the body (ecto, meso and endoderm layer). 3. I suggest to add the reference that support the following paragraph: "For all these reasons, PDLSCs have been extensively studied over the years and showed potential to regenerate not only the periodontal complex but also other dental and non-dental tissues." 4. There are data that shown the expression of OCT-4/SOX2 and stemness in no pluripotent cells. So, I suggest to be careful to describe this information through the manuscript: -- "In a recent study, we reported that about 10% of PDLSCs could present double positivity for SOX2 and OCT-4". --- "Populations of PDLSCs with an embryonic stem cell phenotype also expressed genes related to cardiomyogenesis after treatment with low concentrations." --- "this basis, we recently showed that inflammatory conditions in periodontal tissues also alter the pluripotency state of PDLSCs," --- "Additionally, the in vitro expansion of PDLSCs cultures induce morphological changes as well, by bursting their myofibroblastic



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phenotype, which up-regulate their contractile activity meanwhile reduce their pluripotency state [52]”