



PEER-REVIEW REPORT

Name of journal: World Journal of Stem Cells

Manuscript NO: 59244

Title: Transcriptomic alterations underline aging of osteogenic bone marrow stromal cells

Reviewer's code: 02446029

Position: Peer Reviewer

Academic degree: MD

Professional title: Doctor

Reviewer's Country/Territory: Afghanistan

Author's Country/Territory: China

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Reviewer chosen by: AI Technique

Reviewer accepted review: 2020-09-01 10:07

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Scientific quality	<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 Grade E: Do not publish
Language quality	<input type="checkbox"/> Grade A: Priority publishing <input type="checkbox"/> Grade B: Minor language polishing <input checked="" type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
Conclusion	<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
Re-review	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Peer-reviewer statements	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No



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SPECIFIC COMMENTS TO AUTHORS

Title: The title is appropriate. **Abstract:** Summarizes the manuscript well. **Key Words:** The key words are appropriate. **Background:** Adequately describes background. **Methods:** This is adequate. **Results:** I have made some specific comments to the authors. **Discussion:** This can be expanded. **Illustrations and Tables:** These are appropriate. **Biostatistics:** Meets the requirements. **Units:** This is correct. **References:** These are appropriate. **Quality of Manuscript Organization and Presentation:** I have given the authors some specific comments. **Research Methods and Reporting:** These are appropriate. **Ethics statements:** This is not relevant. **Specific Comments to Authors:** Transcriptomic alterations underline aging of osteogenic bone marrow stromal cells. The authors should seek help from a co-author or reviewer to help with the English language. For example, the title should say "osteogenic bone marrow stromal cells" (s), plural not single cell. The results are interesting, and the data is quite comprehensive, but there are additional controls needed. Some of the data is quite unique and novel. For example, the transcriptomic signatures that are in Figure 3. However, there are other sections of the manuscript, which are required. For example, the histopathology section and Figure 2 and the colony assays, which are largely out of focus or overstained in some of the panels in Figure B at the bottom. The authors should include a number of additional data sets in the revised manuscript if this is appropriate. **Specific Comments:** **Abstract:** This is not grammatically correct English. "Coordinates peripheral adjuncts to exercise movement. The bone marrow stromal cells are being discussed, and this should not be a sentence that has skeletal system and peripheral adjuncts. Adjunct is not an appropriate word for this sentence. The abstract rambles and does not address the facts of the manuscript. There are imaging and histologic specimens from mice studied



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at the age of 1, 3, 7, 12, 15, and 18 months, and the manuscript lacks studies of bone marrow stromal cells, not imaging histologic specimens. The grammar and the writing is detracting from the potential richness of the data. The last sentence in the abstract says “The enrichment of the osteogenic features and osteogenic signaling pathways as WNT and MAPK...” is not a sentence, and does not appropriately discuss what is in the manuscript. Quantitative information should be put in the abstract. Introduction: This rambles and should be focused on what is actually being studied. Bone marrow stromal cells are not described to any degree. The choice of describing PDGF-AA and BMP2 is a choice of two out of hundreds of genes that have been associated with bone marrow stromal cells. Materials and Methods Sections: The materials and methods sections rambles, and is not specific for what is in the paper. The section on bone marrow stromal cells and CFU-F assay is 40 years behind the standards of how these studies should be done. Clonal cell lines of bone marrow stromal cells should be studied, in addition, to purified bone marrow stromal cells either by a flow sorting technique or by another adherence technique. Results: The Results section is confined to several figures. It is not clear what is being shown in Figure 1, which is quantitative measurement of skeletal features. What features? There have to be specific parameters and metrics studied. Panel B does not have a label for the ordinate/vertical axis. Figure 2 has histologic sections, which show bone and marrow, however, the staining is different, the focus is different, several are overstained, and several are understained. The panel A bar graph does not have a label on the vertical axis. Panel B the photographs of the tissue culture plates are overstained as in 1 month, 15 months, 18 months, or understained as in 3 months and 7 months. They are not uniform. Figure 4, which is the signature genes and transcriptional regulators needs to be quantitated and analyzed. Discussion: The discussion needs to be revised once additional data is provided. The controls are critical here. The authors should be



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studying purified bone marrow stromal cells and purified clonal bone marrow stromal cell lines for comparison. As such, the manuscript needs some revision.