

PEER-REVIEW REPORT

Name of journal: World Journal of Stem Cells

Manuscript NO: 55039

Title: Autophagy in fate determination of mesenchymal stem cells and bone remodeling

Reviewer's code: 03950632

Position: Peer Reviewer

Academic degree: PhD

Professional title: Professor

Reviewer's Country/Territory: Spain

Author's Country/Territory: China

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Reviewer chosen by: Jin-Zhou Tang (Quit in 2020)

Reviewer accepted review: 2020-04-03 10:17

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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 Grade E: Do not publish
Language quality	<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
Conclusion	<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
Re-review	<input 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

This review is very interesting and it is based in a great number of papers. The most of them recently published. Bone remodeling is a continuous physiological process that requires the constant generation of new osteoblasts from mesenchymal stem cells (MSCs). Differentiation from MSC to osteoblasts requires a metabolic shift from glycolysis to increased mitochondrial respiration to ensure sufficient energy supply to complete this process. Autophagy has been shown by several authors to be a crucial process necessary in the fate of MSCs. The latest results published in the field are consistent with a model in which MSCs require inducing autophagy and, therefore, reducing the high levels of ROS resulting from increased mitochondrial respiration during osteoblast differentiation. This review will provide an important contribution to our better understanding of the role of autophagy in bone physiology. Concerns: 1-There are several mistyped words along the text (self renewal, A, exhibites, showes, reportes, ostsoclast...) 2-The figures' legends are not specific and they are indicating nothing. They must to be rewritten.