

## PEER-REVIEW REPORT

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

**Manuscript NO:** 86200

**Title:** MicroRNA-584-5p/RUNX family transcription factor 2 axis mediates hypoxia-induced osteogenic differentiation of periosteal stem cells

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

**Peer-review model:** Single blind

**Reviewer's code:** 06110671

**Position:** Peer Reviewer

**Academic degree:** MD

**Professional title:** Doctor

**Reviewer's Country/Territory:** United States

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

**Manuscript submission date:** 2023-07-27

**Reviewer chosen by:** AI Technique

**Reviewer accepted review:** 2023-07-28 09:37

**Reviewer performed review:** 2023-08-07 08:37

**Review time:** 9 Days and 23 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 Grade E: Do not publish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

Thank you very much for asking me to review this manuscript by Jia-Jia Lu et al. This is a basic study to explore the underlying mechanisms of hypoxic environment during bone healing in regulating the differentiation of PSCs into osteoblasts or chondrocytes. The result of the study is of interest and may provide a new mechanistic insight into the regulation of PSC osteogenic differentiation induced by hypoxia. Overall, the manuscript is well designed and written. It might provide a mechanism for PSC osteogenic differentiation. Furthermore, minor comment that I would to proposed: 1. Title: Proper and cover all the core result from the study. 2. Abstract: should be revised. An informative, structured abstract is needed. A structured abstract should include at least such as background, aim, methods, results, and conclusions. It should also address all of the important component from the study. 3. Key words: could cover this study. 4. Introduction: Describe the overall basic knowledge for this study. Moreover, the aim of the study is clear. 5. Method: The present study is methodologically well conducted. 6. Results: The result of this study is of interest. 7. Discussion: The manuscript clearly interprets the finding adequately and appropriately. In addition, the manuscript

highlights the key points clearly. The previous significant paper involved were included in the discussion. 8. Figures: I congratulate the authors for the captions to the figures very explicative and complete. 9. References: The manuscript reviewed previous related literature. Also, the writing language of the article is very successful. This article is a guide for future work.

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**Peer-review model:** Single blind

**Reviewer's code:** 06110806

**Position:** Peer Reviewer

**Academic degree:** MD

**Professional title:** Associate Professor, Doctor

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

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

**Manuscript submission date:** 2023-07-27

**Reviewer chosen by:** AI Technique

**Reviewer accepted review:** 2023-07-31 02:52

**Reviewer performed review:** 2023-08-09 09:01

**Review time:** 9 Days and 6 Hours

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
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
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<b>Conclusion</b>	<input type="checkbox"/> Accept (High priority) <input checked="" type="checkbox"/> Accept (General priority) <input 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 manuscript “MiR-584-5p/RUNX2 Axis Mediates Hypoxia-Induced Periosteal Stem Cell Osteogenic Differentiation” by Jia-Jia Lu explore the impact of the miR-584-5p/RUNX2 axis on hypoxia-induced osteogenic differentiation of PSCs. Overall, this study was well conducted with good methodology and intelligible English. It is well written and highly interesting. Their findings may provide a mechanism for PSC osteogenic differentiation and modulating miR-584-5p and miR-584-5p/RUNX2 might be a new strategy for bone repair and regeneration. The experiment of this study is designed very well. The methods of data analysis are very clear, and the results are presented well. However, the following points must be considered before publication. In my opinion, note that the additional expanded discussions are mandatory. Thank you for giving opportunity to review this study.