

PEER-REVIEW REPORT

Name of journal: *World Journal of Stem Cells*

Manuscript NO: 76678

Title: Overexpression of GATA binding protein 4 and myocyte enhancer factor 2C differentiate mesenchymal stem cells into cardiac-like cells

Provenance and peer review: Invited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 05839722

Position: Peer Reviewer

Academic degree: MD

Professional title: Doctor

Reviewer's Country/Territory: Egypt

Author's Country/Territory: Pakistan

Manuscript submission date: 2022-03-28

Reviewer chosen by: AI Technique

Reviewer accepted review: 2022-03-28 11:09

Reviewer performed review: 2022-04-02 09:22

Review time: 4 Days and 22 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 Grade E: Do not publish
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 checked="" type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Re-review	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No



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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

some language editing is required why authors used ANOVA instead of kruskal-wallis test authors did not use quantitative real time PCR for gene expression they used semiquantitative realtime PCR, so please correct this in the literature

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Title: Overexpression of GATA binding protein 4 and myocyte enhancer factor 2C differentiate mesenchymal stem cells into cardiac-like cells

Provenance and peer review: Invited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 03976790

Position: Editor-in-Chief

Academic degree: DSc, PhD

Professional title: Emeritus Professor

Reviewer's Country/Territory: France

Author's Country/Territory: Pakistan

Manuscript submission date: 2022-03-28

Reviewer chosen by: Dong-Mei Wang

Reviewer accepted review: 2022-05-25 20:07

Reviewer performed review: 2022-06-03 08:36

Review time: 8 Days and 12 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
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
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SPECIFIC COMMENTS TO AUTHORS

Comments on the manuscript: “ Overexpression of GATA-4 and MEF2C in human-umbilical cord mesenchymal stem cells increase their differentiation into cardiac-like cells” Myocardial infarction (MI) is one of the leading causes of death worldwide. Cell therapy should enable cardiac regeneration. The synergistic actions of the transcription factors GATA-4 (GATA Binding Protein 4) and MEF2C (Myocyte Enhancer Factor 2C) play an important role in the embryonic development of cardiac cells. The aim of this study was to investigate the effect on cardiac differentiation of overexpression of cardiac transcription factors in human umbilical cord-derived mesenchymal stem cells (hUC-MSC) this useful work is well done and deserves to be published with, however, improvements to be made to the manuscript. Here are some remarks. Page 6, Immunocytochemistry: Write PFA in full: paraformaldehyde (this is the first time that this word appears in the text). Primary antibodies CD90, CD105, CD73, CD44 and CD45: in which species were these antibodies prepared? (a mouse?): please specify Are there negative controls (omitting the first antibody for example)? Specify, describe these controls. Page 6, Flow cytometry: specify centrifugation speed (in number of g) and duration. Page-6: write "Alexa fluor" instead of "Alexa flour". Page 7: give the name of PBS in full because it is the first time that the word is encountered in the text. Page 7, hUC-MSC transfection: use italics to write *E. coli* Page 7: For the different techniques, give the method quickly: it is not enough to specify "according to the manufacturer's instructions" for a scientific article. Page 7: Gene expression analysis of transfected hUC-MSCs : quickly give the method: it is not enough to specify "according to the manufacturer's instructions" for a scientific article. Page 11, Abbreviations: write

the abbreviations in alphabetical order. Page 19, figure 1: Use scale bars instead of "at 20X magnification"; the scale bars are not visible enough on the photos. Page 20, figure 2: give a negative control photo as an insert for at least one photo. Use scale bars instead of "at 20X magnification"; the scale bars are not visible enough on the photos. Page 22, figure 4: write "transfected" instead of "trasnfected" Use scale bars instead of "at 20X magnification"; the scale bars are not visible enough on the photos. Page 23, figure 5: Indicate scale bars in the legend; the scale bars are not visible enough on the photos.