



**PEER-REVIEW REPORT**

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

**Manuscript NO:** 85215

**Title:** Quercetin ameliorates oxidative stress-induced senescence in nucleus pulposus-derived mesenchymal stem cells via the miR-34a-5p/SIRT1 axis

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

**Peer-review model:** Single blind

**Reviewer’s code:** 05089997

**Position:** Editorial Board

**Academic degree:** Doctor, MD, PhD

**Professional title:** Consultant Physician-Scientist, Professor

**Reviewer’s Country/Territory:** Romania

**Author’s Country/Territory:** China

**Manuscript submission date:** 2023-04-18

**Reviewer chosen by:** AI Technique

**Reviewer accepted review:** 2023-04-25 19:21

**Reviewer performed review:** 2023-05-03 17:51

**Review time:** 7 Days and 22 Hours

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|--|--|
| <b>Scientific quality</b>                          | <input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Very good <input type="checkbox"/> Grade C: Good<br><input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish |
| <b>Novelty of this manuscript</b>                  | <input checked="" type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair<br><input type="checkbox"/> Grade D: No novelty   |
| <b>Creativity or innovation of this manuscript</b> | <input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair<br><input type="checkbox"/> Grade D: No creativity or innovation                                |



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| <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<br><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)<br><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**

Quercetin ameliorates oxidative stress-induced senescence in nucleus pulposus-derived mesenchymal stem cells via the miR-34a-5p/SIRT1 axis: The subject of this study is relevant to both the clinician and regarding further studies, given the high prevalence of intervertebral disc degeneration and the burden of low back pain on the patient, having an intense negative effect on the quality of life. This condition has consequences on the day-to-day activity of the patient and may lead to workplace absenteeism among others, with economic and social ramifications. A better knowledge and higher interest in the molecular mechanisms that lead to intervertebral disc degeneration and the search for therapeutical agents that may prevent and treat it are, therefore, of paramount importance. The paper presents a high level of language clarity and a good overall structure. It is meticulous and concise, with a clear and objective summary of the limitations of the study. There are a couple of points that should be considered to potentially increase the structural quality and coherence of the paper. 1. Please take into account having a structured abstract, given the nature of the paper, that should contain the following key points: Objective, Methodology, Results and Conclusion, in a



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7041 Koll Center Parkway, Suite  
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brief manner 2. Regarding the “Radiographic evaluation and histological analysis” section, please correct to “as previously described” at line 9. 3. Regarding the “Effects of Que on SA- $\beta$ -Gal staining and the cell cycle in NPMSCs” section, line 1, please use “of cellular senescence”. After analyzing the manuscript, it can be considered for publication after making these minor changes.



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

**Peer-review model:** Single blind

**Reviewer's code:** 05573866

**Position:** Peer Reviewer

**Academic degree:** MD

**Professional title:** Assistant Professor

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

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

**Manuscript submission date:** 2023-04-18

**Reviewer chosen by:** Geng-Long Liu

**Reviewer accepted review:** 2023-05-11 03:40

**Reviewer performed review:** 2023-05-16 21:48

**Review time:** 5 Days and 18 Hours

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| <b>Scientific quality</b>                          | <input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Very good <input type="checkbox"/> Grade C: Good<br><input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish |
| <b>Novelty of this manuscript</b>                  | <input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair<br><input type="checkbox"/> Grade D: No novelty   |
| <b>Creativity or innovation of this manuscript</b> | <input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair<br><input type="checkbox"/> Grade D: No creativity or innovation                                |



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|---|--|
| <b>Scientific significance of the conclusion in this manuscript</b> | <input checked="" type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair<br><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 checked="" type="checkbox"/> Accept (General priority)<br><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**

Dear Dr. editor in chief Editorial board: World Journal of stem cells I would like to thank you for your suggestion to review the paper entitled " Quercetin ameliorates oxidative stress-induced senescence in nucleus pulposus-derived mesenchymal stem cells via the miR-34a-5p/SIRT1 axis " for World Journal of stem cell. Comments to the editor: Currently, authors explored the effect of quercetin on reduction of oxidative stress-induced senescence of nucleus pulposus-derived mesenchymal stem cells and investigated the miR-34a/SIRT1 signaling pathway. Authors suggested that Que may be a potential agent for the treatment of intervertebral disc degeneration. The manuscript is interesting and well-structured. Thus, I would recommend acceptance of this manuscript after some corrections. According the check list I have added the following comments; The title reflects the main subject/hypothesis of the manuscript The abstract is well summarized and described the work in the manuscript. Comments to Authors: authors explored the effect of quercetin on reduction of oxidative stress-induced senescence of nucleus pulposus-derived mesenchymal stem cells and investigated the miR-34a/SIRT1 signaling pathway. Generally, it is an interesting study, however there are some



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comments and questions the authors should address all were detailed below: Major corrections: • Describe the component of medium used for culturing NPMSCs, authors didn't mention the proper medium. • Authors are encouraged to provide original gel of the western blots. • Introduction needs to be summarized. Comments to Authors: authors explored the effect of quercetin on reduction of oxidative stress-induced senescence of nucleus pulposus-derived mesenchymal stem cells and investigated the miR-34a/SIRT1 signaling pathway. Generally, it is an interesting study, however there are some comments and questions the authors should address all were detailed below: Major corrections: • Describe the component of medium used for culturing NPMSCs, authors didn't mention the proper medium. • Authors are encouraged to provide original gel of the western blots. • Introduction needs to be summarized.