

JOURNAL EDITOR-IN-CHIEF'S 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

Journal Editor-in-Chief (Associate Editor): Shengwen Calvin Li

Country/Territory: United States

Editorial Director: Jia-Ping Yan

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SCIENTIFIC QUALITY	LANGUAGE QUALITY	CONCLUSION
<input checked="" type="checkbox"/> [Y] Grade A: Excellent	<input type="checkbox"/> [] Grade A: Priority publishing	<input type="checkbox"/> [] Accept
<input type="checkbox"/> [] Grade B: Very good	<input checked="" type="checkbox"/> [Y] Grade B: Minor language polishing	<input type="checkbox"/> [] High priority for publication
<input type="checkbox"/> [] Grade C: Good	<input type="checkbox"/> [] Grade C: A great deal of	<input type="checkbox"/> [] Rejection
<input type="checkbox"/> [] Grade D: Fair	language polishing	<input checked="" type="checkbox"/> [Y] Minor revision
<input type="checkbox"/> [] Grade E: Poor	<input type="checkbox"/> [] Grade D: Rejected	<input type="checkbox"/> [] Major revision

JOURNAL EDITOR-IN-CHIEF (ASSOCIATE EDITOR) COMMENTS TO AUTHORS

Specific comments: 1) The title should be indicated the data set from rat modeling, not humans. The current version of the title: "Quercetin ameliorates oxidative stress-induced senescence in nucleus pulposus-derived mesenchymal stem cells via the miR-34a-5p/SIRT1 axis," is too generic to be specific. 2) Abstract: "CONCLUSION a. In summary, the present study provides evidence that Que reduces oxidative stress-induced senescence of NPMSCs via the miR-34a/SIRT1 signaling pathway, suggesting that Que may be a potential agent for the treatment of IDD." 3) Page 18: "Hence, it remains unknown whether Que plays a role in NPMSC senescence induced by oxidative stress via other signaling pathways, suggesting that further study is needed to explore the other mechanisms underlying the protective effect of Que on NPMSCs. Moreover, future clinical studies are needed to evaluate the effect of Que on IDD progress." What are other signaling pathways? 4) Figures 2, 3, 4, 5, 6, 8, 9, 10, 11: Why did the authors not include Que (Quercetin) alone, but with TBHP (Tert-butyl



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hydroperoxide to trigger oxidative stress in NPMSCs) alone and Que + TBHP? 5) Page 11: "In total, 15 male SD rats (2-4 mo old and weighing 200-300 g) were randomly divided into the following three groups: Control group (n = 5), IDD group (n = 5), and Que group (n = 5)." What was the justification of 5?" What was the power of confidence in statistics? A high-power value (e.g., 0.8 or higher) indicates a greater likelihood of detecting a true effect if it exists. Researchers typically aim for high power to ensure their study has sufficient sensitivity to detect meaningful effects. Neither Jing-feng Li, Ph.D., the statistician, nor the authors stated that. 6) Page 13: "Effects of Que on MMP and ROS generation NPMSCs" - What does that mean in English? 7) Page 15: "However, Que treatment alleviated the degeneration and morphological changes in the NP and AF (Figure 12F)." Beyond morphology, any functional behavior testing existed? 8) A schematic diagram, like graphic abstract or molecular mechanisms, should be included to enhance the manuscript's clarity.