

PEER-REVIEW REPORT

Name of journal: *World Journal of Stem Cells*

Manuscript NO: 89262

Title: Extracellular vesicles derived from mesenchymal stem cells mediate extracellular matrix remodeling in osteoarthritis through the transport of microRNA-29a

Provenance and peer review: Unsolicited manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 04861666

Position: Peer Reviewer

Academic degree: BSc, MSc, PhD

Professional title: Assistant Professor

Reviewer's Country/Territory: India

Author's Country/Territory: China

Manuscript submission date: 2023-10-26

Reviewer chosen by: AI Technique

Reviewer accepted review: 2023-10-26 08:01

Reviewer performed review: 2023-11-03 09:18

Review time: 8 Days and 1 Hour

Scientific quality	☐ Grade A: Excellent ☒ Grade B: Very good ☐ Grade C: Good ☐ Grade D: Fair ☐ Grade E: Do not publish
Novelty of this manuscript	☐ Grade A: Excellent ☒ Grade B: Good ☐ Grade C: Fair ☐ Grade D: No novelty
Creativity or innovation of this manuscript	☐ Grade A: Excellent ☒ Grade B: Good ☐ Grade C: Fair ☐ Grade D: No creativity or innovation

Scientific significance of the conclusion in this manuscript	☒ Grade A: Excellent ☐ Grade B: Good ☐ Grade C: Fair ☐ Grade D: No scientific significance
Language quality	☐ Grade A: Priority publishing ☒ Grade B: Minor language polishing ☐ Grade C: A great deal of language polishing ☐ Grade D: Rejection
Conclusion	☐ Accept (High priority) ☒ Accept (General priority) ☐ Minor revision ☐ Major revision ☐ Rejection
Re-review	☐ Yes ☒ No
Peer-reviewer statements	Peer-Review: ☐ Anonymous ☒ Onymous
	Conflicts-of-Interest: ☐ Yes ☒ No

SPECIFIC COMMENTS TO AUTHORS

The manuscript discusses knee osteoarthritis (KOA), a prevalent orthopedic condition with an uncertain etiology, likely involving genetic and biomechanical factors. It explores the impact of chondrocyte microenvironment changes, oxidative stress, inflammation, and immune responses on KOA development. An early-stage treatments mainly target symptom relief. Mesenchymal stem cells (MSCs) hold potential for KOA treatment, but challenges persist. Recent research underscores the potential of microRNAs (miR-29a) within MSC-released extracellular vesicles (Exos) in promoting cartilage regeneration and slowing KOA progression. This highlights Exos as a promising avenue for future treatment, although safety and efficacy validation is necessary. In my opinion, manuscript is written well and curent finding hold significant importance in managing KOA progression. Comment: In Introduction section following statement is written "According to the Global Burden of Disease Study 2015, KOA contributes to 85% of all cases of osteoarthritis". I suggest author to have look any recent data is available for it.

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Reviewer's code: 03950632

Position: Peer Reviewer

Academic degree: PhD

Professional title: Associate Professor

Reviewer's Country/Territory: Spain

Author's Country/Territory: China

Manuscript submission date: 2023-10-26

Reviewer chosen by: AI Technique

Reviewer accepted review: 2023-10-26 09:13

Reviewer performed review: 2023-11-07 11:08

Review time: 12 Days and 1 Hour

Scientific quality	☐ Grade A: Excellent ☒ Grade B: Very good ☐ Grade C: Good ☐ Grade D: Fair ☐ Grade E: Do not publish
Novelty of this manuscript	☐ Grade A: Excellent ☐ Grade B: Good ☒ Grade C: Fair ☐ Grade D: No novelty
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	Conflicts-of-Interest: ☐ Yes ☒ No

SPECIFIC COMMENTS TO AUTHORS

The authors engineered exosomes loaded with miR-29a. It can exert anti-inflammatory effects and maintain extracellular matrix stability, thereby protecting articular cartilage, and slowing the progression of knee osteoarthritis. Concerns: The figures chosen by the authors to represent the results are not clear enough. Furthermore, it is not indicated which part of the joint is the one shown in the photos.