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PEER-REVIEW REPORT

Name of journal: *World Journal of Orthopedics*

Manuscript NO: 85235

Title: Silver (Ag) Nanoparticle (NP) Technology in Orthopaedic Infections

Provenance and peer review: Invited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 02446061

Position: Editorial Board

Academic degree: MD, PhD

Professional title: Full Professor, Research Scientist

Reviewer's Country/Territory: Mexico

Author's Country/Territory: India

Manuscript submission date: 2023-04-18

Reviewer chosen by: Geng-Long Liu

Reviewer accepted review: 2023-06-28 00:42

Reviewer performed review: 2023-06-29 02:54

Review time: 1 Day and 2 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 Grade E: Do not publish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
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

Scientific significance of the conclusion in 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 scientific significance
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
Re-review	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
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

SPECIFIC COMMENTS TO AUTHORS

The manuscript is interesting as a mini-review. However, some suggestions can be considered to improve it. a) Check the entire manuscript to avoid typo mistakes. I found three in text and two in Figure 2. b) Enrich the mechanisms of action. For example, check the figure 4 at (<https://jnanobiotechnology.biomedcentral.com/articles/10.1186/s12951-017-0308-z>) c) I suggest the addition of a figure showing biomaterial using AgNP (as those described in section "AgNP in orthopaedic infections") d) Enrich the content of the results in patients whose use devices with NPs. There are some recent reports in this field. e) Please improve the originality of your work. Several other recent reviews are in the field (Sakthi Devi, R., Girigoswami, A., Siddharth, M., & Girigoswami, K. (2022). Applications of gold and silver nanoparticles in theranostics. *Applied Biochemistry and Biotechnology*, 194(9), 4187-4219.; Damle, A., Sundaresan, R., Rajwade, J. M., Srivastava, P., & Naik, A. (2022). A concise review on implications of silver nanoparticles in bone tissue engineering. *Biomaterials Advances*, 213099. Wang, N., Fuh, J. Y. H., Dheen, S. T., & Senthil Kumar, A. (2021). Functions and applications of metallic and metallic oxide nanoparticles in

orthopedic implants and scaffolds. Journal of Biomedical Materials Research Part B: Applied Biomaterials, 109(2), 160-179. Joshi, M. U., Kulkarni, S. P., Choppadandi, M., Keerthana, M., & Kapusetti, G. (2023). Current state of art smart coatings for orthopedic implants: A comprehensive review. Smart Materials in Medicine.)

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Manuscript NO: 85235

Title: Silver (Ag) Nanoparticle (NP) Technology in Orthopaedic Infections

Provenance and peer review: Invited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 00722252

Position: Peer Reviewer

Academic degree: MD

Professional title: Assistant Professor, Doctor

Reviewer's Country/Territory: Tunisia

Author's Country/Territory: India

Manuscript submission date: 2023-04-18

Reviewer chosen by: Geng-Long Liu

Reviewer accepted review: 2023-07-04 07:13

Reviewer performed review: 2023-07-08 16:04

Review time: 4 Days and 8 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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Scientific significance of the conclusion in 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 scientific significance
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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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

SPECIFIC COMMENTS TO AUTHORS

Well written article

PEER-REVIEW REPORT

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Manuscript NO: 85235

Title: Silver (Ag) Nanoparticle (NP) Technology in Orthopaedic Infections

Provenance and peer review: Invited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 02489549

Position: Peer Reviewer

Academic degree: PharmD, PhD

Professional title: Doctor, Lecturer, Pharmacist

Reviewer's Country/Territory: United Kingdom

Author's Country/Territory: India

Manuscript submission date: 2023-04-18

Reviewer chosen by: Geng-Long Liu

Reviewer accepted review: 2023-07-04 11:41

Reviewer performed review: 2023-07-13 10:31

Review time: 8 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
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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Re-review	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
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

SPECIFIC COMMENTS TO AUTHORS

The authors have done a nice job summarizing the applications of silver nanoparticles in prevention of bacterial infections following orthopaedic procedures. However, there are some issues which need to be addressed before the manuscript can be considered for publication. 1. The sections "Silver (Ag) Nanoparticles (NP) technology" and "AgNP in orthopaedic infections" lack enough references. The arguments should be backed up by providing relevant references for each argument. 2. The sentence "Recent technologies use NP to load Ag ions which may be used as an antimicrobial agent in a target-specific manner" should be followed by further clarification and/or some examples of how target-specific antimicrobial activity is achieved. 3. Regarding the mechanism of action of Ag nanoparticles in infections, it is not clarified if all the named mechanisms happen sequentially or if these are independent of each other and could happen in different types of bacteria. Also, no references are cited in this section. 4. There are some grammatical mistakes throughout the manuscript such as switching between the present and past tense within the same sentence or paragraph. 5. Some formatting is required e.g., *in vitro* should be italicized. 6. There is a lack of sufficient recent literature and

almost 50% of the references are older than 10 years. The manuscript should be updated by adding more recent literature.

RE-REVIEW REPORT OF REVISED MANUSCRIPT

Name of journal: *World Journal of Orthopedics*

Manuscript NO: 85235

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Peer-review model: Single blind

Reviewer's code: 02489549

Position: Peer Reviewer

Academic degree: PharmD, PhD

Professional title: Doctor, Lecturer, Pharmacist

Reviewer's Country/Territory: United Kingdom

Author's Country/Territory: India

Manuscript submission date: 2023-04-18

Reviewer chosen by: Ji-Hong Liu

Reviewer accepted review: 2023-07-26 22:06

Reviewer performed review: 2023-07-27 10:06

Review time: 11 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 checked="" type="checkbox"/> Grade A: Priority publishing <input 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
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

SPECIFIC COMMENTS TO AUTHORS

I would like to thank the authors for applying the suggested corrections to the first draft of the manuscript. However, there is still one more issue to be addressed: The first two paragraphs in the section "TOXICITY OF AGNP" do not have even a single citation. As mentioned in my previous comments, every argument or information provided should be backed up by some references. To be more clear, please add citation to the relevant references after each group of sentences which point out an argument or refer to the literature information.