Review of: "Synthesis of Nickel Nanoparticles Using Ionic Liquid-Based Extract from Amaranthus viridis and Their Antibacterial Activity"

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Potential competing interests: No potential competing interests to declare.

Dear …

First of all, I would like to thank you for choosing me as a referee for judging a manuscript entitled " Synthesis of Nickel Nanoparticles Using Ionic Liquid-Based Extract from Amaranthus viridis and Their Antibacterial Activity" submitted to Qeios. In this research, the authors report the green synthesis of Ni nanoparticles by *Amaranthus viridis* extract as the antibacterial agent. The study was not conducted systematically and was poorly written; therefore, the manuscript needs improvement and enhancement. All comments were highlighted in the attached PDF file. In addition:

1. The abstract section should be more quantitative, and optimal conditions should be included (such as the size of NPs, type of bacteria (Gram-positive or Gram-negative), used NPs concentration for the antibacterial study, and inhibition zone size for bacteria).
2. What is the novelty behind the research on the synthesis of Ni NPs as antibacterial activity in this study? (This should be more explained in the introduction.)
3. The manuscript should be submitted in a Word file with line numbers for easy review.
4. Please ensure that the formatting of the text is carefully checked, including the justification of lines and paragraph spacing.
5. Please remember the following text: "The plant's name must be written in italics in the body of the text."
6. Why is the ionic liquid's name different in the abstract and materials? 1-ethyl-3-methyl imidazolium acetate [C_2MIM] Ac or 1-ethyl-3-methyl imidazolium chloride [C_3MIM]Cl?
7. The name of the bacteria must be italicized within the body of the text. In the materials section, it is preferable to include the bacteria code for each bacteria used in this study.
8. In section 3.1, the details are not related to the UV-Vis analysis of Ni NPs, and instead, the text of the antibacterial method is repeated. Additionally, Figure 1 is not explained in the text.
9. For the synthesis of nanomaterials using plant extracts, FTIR analysis of the plant is necessary to compare with the synthesized nanomaterials (check unit style, cm^{-1})
10. Write the Debye-Scherrer equation into the text (check degree style, 33.3°).
11. In the SEM image, the date is from July 11, 2016, which is not acceptable for research on NPs in 2024.
12. To assess the antibacterial activity of the nanoparticles synthesized from plants, it is important to analyze the

antibacterial activity of the plant itself. By comparing the antibacterial activity of the nanoparticles and the plants, we can determine the impact of the nanoparticles on the bacteria. Additionally, please include the concentration of nanoparticles used in the antibacterial study.

13. Deep revision of the English language level is emphasized.
14. Finally, the authors need to significantly improve and enhance this manuscript in all sections.

Best regards,