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.

Reviewer Comments

The authors in their manuscript “Synthesis of Nickel Nanoparticles Using Ionic Liquid- Based Extract from Amarantuhus viridis and their antibacterial activity”, describe the synthesis of nickel nanoparticles using ionic liquids with microwaves. However, in its current form the manuscript can not be accepted as there are various issues that need to be addressed as detailed below. Therefore, our recommendation is for major revisions.

Major changes:

1. In their introduction, the authors provide very few details regarding Nickel Nanoparticle synthesis. What other methods of green chemistry have been applied for Nickel Nanoparticle synthesis? (Example [1]) Why the proposed method in this manuscript is novel compared to other methods? Besides Amaranthus viridis are other extracts used with ionic-liquids for nanoparticle synthesis? Including answers to these questions will make stronger the argument for novelty.
2. In section 2.2, why 5 g were chosen? Why at 60 °C and why for 20 minutes?
3. In section 2.2., why 5 mL of 0.01 mM solution was chosen?
4. In section 2.2, what was the model of the centrifuge and please provide RCF instead of RPM.
5. In section 2.3, what type cuvettes were used (material, path length). What was the blank used?
6. In section 2.3, what model evaporator was used for gold coating?
7. In section 2.4, what were the initial bacterial concentrations and what were the working concentrations?
8. In section 2.1, all materials should be described (manufacturer, stock solution e.t.c.), including agar, tsb e.t.c..
9. In section 2.4, what amounts of nanoparticles were added? Please be specific on ratios of ml or mg e.t.c.
10. In section 2.4, how were the inhibition’s zones measured?
11. In section 3.1 although the title is “UV – Vis analysis of Ni NPs”, the authors present their antibacterial results.
12. In section 3.2. the authors assign observed spectra to various vibrations without any citation. Please provide citations for all band assignments.
13. In figure 3 please include the prototype data (e.g. 04-0835 of JCPDS dataset)

References

1. ^*Selahattin Kondak, Dóra Kondak, Onur Kabadayi, László Erdei, et al. (2024). Current insights into the green synthesis, in planta characterization and phytoeffects of nickel nanoparticles and their agricultural implications. Environmental Research, vol. 260 , 119665. doi:10.1016/j.envres.2024.119665.*