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

Nabi Jomehzadeh[1]

1 Ahvaz Jundishapur University of Medical Sciences, Ahvāz, Iran

Potential competing interests: No potential competing interests to declare.

The manuscript presents a novel approach for the synthesis of nickel nanoparticles (Ni NPs) utilizing an ionic liquid-based extract derived from Amaranthus viridis. The authors have conducted a thorough characterization of the synthesized Ni NPs and have demonstrated their antibacterial properties. However, the manuscript necessitates improvements in several areas, including the introduction, experimental section, data interpretation, and the presentation of figures and tables. With these enhancements, the manuscript possesses the potential to be a high-quality publication in a reputable journal.

1. It is imperative to provide a more detailed background regarding Ni NPs and their various applications, along with a clear explanation for selecting Amaranthus viridis as a source for the ionic liquid-based extract.

2. The manuscript should include additional details regarding the optimization of synthesis conditions, specifically addressing the influence of microwave power, reaction time, and ionic liquid concentration on the synthesis of Ni NPs.

3. A more in-depth discussion on data interpretation is essential, particularly concerning the results related to antibacterial activity. It is advisable to compare these findings with existing studies and to explore the potential mechanisms underlying the antibacterial effects of Ni NPs.

4. The quality of figures and tables should be enhanced to improve readability and clarity.

5. Finally, consideration should be given to employing additional characterization techniques, such as transmission electron microscopy (TEM) and X-ray photoelectron spectroscopy (XPS), in order to provide a more comprehensive understanding of the synthesized Ni NPs.