

# Review of: "Synthesis of 1, 2-Disubstituted Benzimidazoles at Ambient Temperature Catalyzed by 1-Methylimidazolium Tetrafluoroborate ([Hmim] BF<sub>4</sub>) and Investigating Their Anti-ovarian Cancer Properties Through Molecular Docking Studies and Calculations"

Sajjad Hussain Sumra<sup>1</sup>

<sup>1</sup> University of Gujrat

Potential competing interests: No potential competing interests to declare.

## **[Review Report for Qeios]**

The manuscript entitled "Synthesis of 1, 2-Disubstituted Benzimidazoles at Ambient Temperature Catalyzed by 1-Methylimidazolium Tetrafluoroborate ([Hmim] BF<sub>4</sub>) and Investigating Their Anti-ovarian Cancer Properties Through Molecular Docking Studies and Calculations" has not been significantly revised. Therefore, extended studies and significant improvements are required to be published in the journal, *Qeios*. This manuscript continues to be rather poor in scientific and English writing. Some of my serious concerns are given below:

1. Revise the graphical abstract. It is not appealing.
2. Rewrite the abstract; it should summarize the main results of the work and not read like the introduction and conclusion.
3. The introduction part of the manuscript is not appealing and must be revised. Cite the following papers for molecular docking simulation studies:
  - <https://doi.org/10.1016/j.molstruc.2022.134780>
  - <https://doi.org/10.1080/07391102.2023.2293260>
  - <https://doi.org/10.1007/s10534-022-00385-6>
4. The manuscript needs reorganization and should be restructured and complemented with more computational/experimental information. All the results are not properly discussed. Include more discussion of the results rather than simply tabulating the results.
5. Cite the method adopted for the preparation of derivatives. Also, mention the solvent mixture used for the TLC and add details of centrifugation.
6. What is the methodology used for selecting the protein in molecular docking studies?
7. Use a white background for docking Figure 2 to get a more precise outcome. Also, correct it in the graphical abstract.

8. In the Results and Discussion section, there is nothing about the details of the spectral analysis (NMR) results. Write a detailed note on each NMR technique and compare your results with the reported values. Discuss and cite the following references;

- <https://doi.org/10.3109/14756366.2011.582686>
- <https://doi.org/10.1007/s11696-022-02123-1>
- <https://doi.org/10.1134/S107036321708031X>

9. Add melting points of synthesized 1, 2-disubstituted benzimidazole derivatives.

10. The data is not represented in a well-structured and presentable manner. The text of the manuscript must be properly aligned and formatted.

11. Add missing units in the heading columns of tables.

12. Some sentences are too weak, and there are a lot of grammatical mistakes throughout the manuscript. Authors are suggested to improve the grammar of the manuscript scientifically.