

Review of: "Synthesis of 1, 2-Disubstituted Benzimidazoles at Ambient Temperature Catalyzed by 1-Methylimidazolium Tetrafluoroborate ([Hmim] BF₄) and Investigating Their Anti-ovarian Cancer Properties Through Molecular Docking Studies and Calculations"

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Potential competing interests: No potential competing interests to declare.

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Synthesis of 1, 2-Disubstituted Benzimidazoles at Ambient Temperature Catalyzed by 1-Methylimidazolium Tetrafluoroborate ([Hmim] BF₄) and Investigating Their Anti-ovarian Cancer Properties Through Molecular Docking Studies and Calculations

This article deals with the use of ionic liquids as catalysts in the synthesis of benzimidazoles. Molecular docking was performed to demonstrate the potential applications as an ovarian cancer agent. Overall, this article is unconvincing and confuses the reader as to the aims of this work. There is no evidence or experimental data to show that these compounds are good for ovarian cancer. This work needs to be backed up with *in vitro* data. My commentary on this paper is below.

1. Abstract

- a. The last statement "it was found that these compounds have the potential to become an oral anti-cancer drug" – Please remove. This statement is valid if *in vitro* evaluation was done.

2. Introduction

- a. Scheme 1 – Please redraw. What is R?
- b. The purpose or objective of this work is not clear.

3. Experimental section

- a. Page 5 – Please mention reference pick for deuterated solvent, NMR software.
- b. Page 5 – There are no NMR data for these compounds. If all synthesized compounds are known compounds, please mention in the text.
- c. Please add experimental section for molecular docking – Important.

4. Results and discussion

- a. Table 2 – Confusing the reader, especially under ‘Product’ label. It is only 1 product.
- b. Please mention the reason for choosing the 6LAD for molecular docking.
- c. Please add the docking data for control for comparison.
- d. The data need the *in vitro* experiment data.
- e. Discussion in page 13 and Table 6 (in page 14) is confusing. Please write clearly in the beginning the objective of this project.

5. Conclusion

- a. The conclusion is not convincing.