Review of: "Synthesis and Antibacterial Screening of Cefradine Schiff Bases and Their Metal Salts"

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Potential competing interests: No potential competing interests to declare.

The study entitled ‘Synthesis and Antibacterial Screening of Cefradine Schiff Bases and Their Metal Salts’ presents the antibacterial activity of a series of novel synthetic compounds. I believe this study contributes to research carried out via Schiff Bases and provides important outcomes. I would like to point out some parts that could improve the quality of this study. Even though this study received no funding, I strongly suggest authors to be able to complete the following parts;

1. Please rewrite the abstract part to show the ‘current problem, -aim -missing information on the literature, motivation of the study, and summary of the study. Add the ‘zone of inhibition’ result in the abstract.
2. I suggest the intoduction part consist of some details: Current problems with antibacterial agents -recent studies -recent FDA/or any health care authority-approved antibacterial drugs—what is going on with cefradine (is it not enough?) Why Schiff bases? importance of Schiff bases in the literature and recent antibacterial activities of Schiff bases Why metal complexes? Why specifically Na, K, Ca, Ba, and Ag metals? -lastly, a total sum up of the literary information and pointing out your current study.
3. In the experimantal part, please expand the details of the technologies (for example, is it direct IR or KBr pellets?). Write the solvent system in NMR in the experimental part and include Hz levels.
4. I strongly suggest the authors include 13C-NMR and MS (even LCMS is fine) analysis of the ligands. IR and 1H-NMR are not providing detailed information for structure elucidation in today's technology.
5. Please provide supporting information; this will improve the quality of the study and also help other researchers with their studies.
6. Write the TLC conditions
7. Please provide a detailed structural elucidation, including the closed formula and purity (preferably with HPLC, but if not, Rfx100 vales in TLC). Please add 13C-NMR and mass analysis.
8. For broad singlet in NMR, you may write as ‘bs’
9. You do not need to put IR data on the table; you can write separately for each compound in their structure elucidation. Please indicate stretching and bending signals in IR.
10. For metal salt elucidation, do provide more spectroscopic data on the compounds.
11. When the authors provide more spectroscopic data, please add the discussion of chemistry, including 13C-NMR and mass analysis. Discuss the purity of the compounds.
12. Are there any cis or trans forms observed in Schiff bases? Please add to the discussion.
13. Add the compound IUPAC names for each structure.

14. The structure-activity relationship of the compounds must be improved.
15. After completing the improvements, please rewrite the conclusion part more thoroughly. Add the ‘zone of inhibition’ result to the conclusion and provide your solution to the current problem.