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.

Abstract:

The abstract provides a concise overview of the research conducted. It effectively summarizes the synthesis of Schiff bases of cefradine and their metal salts, highlighting the use of various aldehydes/ketones and bases/salts. The rationale for the study is well-explained, linking it to the need for new antibiotic derivatives to combat drug resistance. However, some improvements could be made for clarity and precision.

The specific aldehydes and ketones used in the synthesis are not mentioned in the abstract, and it would be beneficial to include this information for a more comprehensive summary.

The abstract mentions "low activities" of the synthesized compounds compared to cefradine. It would be helpful to provide specific data or percentage inhibitions to quantify the observed activities.

Introduction:

The introduction provides a solid background on Schiff bases, emphasizing their chelating abilities and applications in coordination chemistry. The significance of Schiff bases in various fields, especially in medicinal and pharmaceutical applications, is well-stated. The introduction effectively establishes the motivation for the study by addressing the challenges of antibiotic resistance and the need for new derivatives.

The introduction could benefit from a more direct connection between the general properties of Schiff bases and the specific focus on cefradine derivatives in this study.

The introduction mentions the broad range of biological activities exhibited by Schiff bases, but it would be useful to briefly discuss the potential advantages or unique features of cefradine Schiff bases.

Experimental:

The experimental section provides a clear and detailed account of the synthesis process, including the materials, methods, and characterization techniques used. The NMR data for each synthesized compound are presented systematically, aiding in reproducibility.

It would be beneficial to include reaction schemes for the synthesis of Schiff bases and their metal salts to enhance clarity.

The general procedure for the preparation of salts lacks specific details on the reaction conditions (e.g., temperature,

reaction time).

The purification methods for the silver salts are briefly mentioned; providing more details on the recrystallization process could improve the reproducibility of the results.

Overall, the article provides valuable insights into the synthesis and antibacterial evaluation of Schiff bases of cefradine and their metal salts. Improvements in the abstract's clarity, a more direct link in the introduction, and additional details in the experimental section would enhance the overall quality of the manuscript. Additionally, providing specific antibacterial activity data for the synthesized compounds would strengthen the conclusions.