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.

General comments including questions

The ideas included in the paper are good, but they are not enough for publication because of a lack of several ideas which must be included and writing errors. Some of the comments and questions are listed below as my observations.

1. The formation of each synthesized Schiff base ligand and metal salt is approved by the UV-visible spectrometer, simple XRD, and mass spectrometer, besides FTIR and NMR.
2. For the synthesis of the Schiff base ligand and metal salt, the FTIR and NMR data written under the method part are results rather than methods; rewrite it.
3. The written FTIR and NMR data must be supported by graphical peaks.
4. The general procedure followed and the results written in table 3 (structure of synthesized compounds) are not related.

Cefradine + aldehyde/ketone Schiff base ligand + metal hydroxide / salt metal salt

So the structure of the metal salt must contain the synthesized Schiff base ligand and metal hydroxide.

1. What is the basis for selecting this metal hydroxide/salt that reacts with the synthesized Schiff base? Why not use d-block elements having vacant d-orbitals rather than main group elements?
2. The antibacterial activity of the synthesized Schiff base ligand compared to the metal salt is almost the same, even greater than that of the metal salt, so what is the need for synthesizing the metal salt?
3. Based on the FTIR data during the synthesis of the Schiff base, the absence of C=O from the aldehyde/ketone and the NH_2 group from the cefradine indicates the formation of the Schiff base ligand. However, there is an aldehyde which contains an amine group (4-dimethylaminobenzaldehyde). How can we say confidently that the Schiff base ligand is formed?
4. During the formation of the metal salt, the metal hydroxide/salt forms a bond with the hydroxide part of the Schiff base ligand. Why does the metal hydroxide/salt not form a bond at the sulfur site of the ligand?