The manuscript 'Application of 1-Hydroxy-4,5-Dimethyl-Imidazole 3- Oxide as Coformer in Formation of Pharmaceutica Cocrystals' reported the two cocrystals with barbituric and thiobarbituric acids. The findings of this paper are very interesting and the experimental support for their claims are really good. However, I have following concern before it gets accepted in this journal:

1. In the section 2.8, what is the basis for selecting these three solvents for the solubility? If the solvent selection is based on the tautomers of TBA then what is the basis of using the same solvent system for BA? Would BA also give the similar type of different tautomers/polymorphs/pseudopolymorphs in different solvent you used? Please clarify this.
2. Description for the figure 4 needs clarification or re-writing to clarify which tautomer is what instead of solvent system in the description or mention both.
3. Also, from figure 4, do authors mean that; to prepare right side material d, e, f, they used a, b, c? I mean to prepare 'd', physical mixture 'a' is used? If not, please correct the description and explanation accordingly.
4. In figure 7, I would put ^{13}C CP/MAS spectrum of the coformer (BA), cocrystal (BA_HIMO) and HIMO to see the differences. Also, please put the stack image of the calculated PXRD pattern and the theoretical pattern of the cocrystal for better understanding of purity of bulk powder material.
5. It seems Figures 12, 13, 14 and 15 are wrong as the HIMO has two hydrogens present of the oxygen atom bonded to both the nitrogens.
6. Figure 17 represents which solvent system as you have done in three systems? Also, please clarify how many experiments have you done for this solubility study?
7. I would like to know whether you have done any stability study on the powder obtained (after filtration) in this solubility study for 12 hours such as PXRD, DSC etc, in order to understand the cocrystal stability. It is important as the coformers are polymorphic/tautomeric.
8. Line number 566 from the EHS point of view; authors have used MeOH as a solvent which is usually not desired solvent compared EtOH or water. Just this line is contradicting the solvent used in your study.

Apart from this the overall study and results look very interesting. This manuscript can be accepted after clarification for the above points.