Review of: "Evaluating the effect of shelf-storage, daylight, and air oxygen on the peroxidase-like activity of unmodified silver nanoparticles"

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Potential competing interests: No potential competing interests to declare.

Evaluating the effect of shelf-storage, daylight, and air oxygen on the peroxidase-like activity of unmodified silver nanoparticles

Abstract

T*he stability of the catalytic activity of the as-prepared nanozymes was also checked upon their storage at ambient temperature within 7 days at different storage conditions.*

- In the abstract the author mentioned that the synthesized nanoenzymes was stored at different storage conditions but in the methodology, they did not mention what are the storage conditions. I would like to suggest the author should mention in the methodology what are their storage conditions?

Experimental section

1. Suptopic 2.2: Author should brief what is the technique they used to synthesis the nanoparticles, is it chemical or biological method? What is DI water? I would suggest the author spell it in full what is the DI refer to since it is mentioned for the 1st time here in method part.
2. I suggest the author add subtopic on the storage conditions the use for stability study. Did author do the stability study for each nanoparticle that stored in different temperature (ambient? 4^{o}c?)
3. Add subtopic on the methodology of characteristic study. Is the characteristics study were conducted for nanoparticles that stored in different storage conditions? How about the duration? 7 days?
4. There is no information regarding the methodology on how the author do the peroxidase like activity of their nanoparticles in shelf storage, daylight and air oxygen. For daylight what temperature? Air oxygen what temperature? For how many days of duration? They did mention in results and discussion, but this information was not stated in methodology part.
5. For testing the effect shelf-storage stability did the author expose the nanoparticles with air oxygen? Not mentioned in the experimental section.

Results and discussion

1. Suptopic 3.3: *This reduction of activity can be contributed to particle aggregation of nanoparticles by light. The aggregation of the nanoparticles leads to an increase in their size and consequently, their catalytic performances will reduce. Besides, daylight can catalyze the surface oxidation of these nanoparticles which cause to reduce their catalytic activity.* Did you conduct the TEM study to determine whether the nanoparticles undergo aggregation or increase in size within 7 days of storage? If no characteristic study conducted within 7 days of storage, I suggest the author to include reference for this statement.
2. Suptopic 3.4: How you can exclude the effect of temperature for “air oxygen” condition. In this study, the nanoparticles were stored at ambient temperature for 7 days. So, the effect of decrease in residual activity might solely be due to the temperature not due to the air. Lack of discussion or analysis in this subtopic. The author only mentioned about the method (which is supposed to mention in experimental section) and result but no discussion.
3. Suptopic 3.5: the author only mentioned the method and result but no further discussion on this part.

Conclusion part is repetition of the abstract part. I suggest the author reconstruct the abstract part. The abstract part should have some introduction, methods, result and overall conclusion. Please make sure the abstract is different from your conclusion.

Unmodified silver nanoparticles is the same with nanoenzymes in this articles context. Please make sure you standardized the word. For examples in abstract part.

The results revealed that the peroxidase-like activity of unmodified silver nanoparticles was approximately retained at about 75%, and 63% after 7 days exposing daylight and air oxygen, in order. The shelflife (storage stability) of the as-prepared nanozymes was also investigated at usual storage conditions (i.e., 4 °C under dark), revealed that the nanozymes saved their activity about 96% of their initial activity after 10 days of storage at 4 °C under dark conditions.

- *you refer your nanoparticles as unmodified silver nanoparticles for daylight and air oxygen. But in shelf storage you refer as nanoenzymes.*

3. Results and Discussion

3.1. Characterization of nanozymes

Unmodified silver nanoparticles were synthesized and characterized for their size and morphological properties. In this regard, the TEM image of the as-prepared nanozyme was recorded and the results are shown in Figure 1, as shown in this figure, the as-prepared silver nanoparticles showed uniform morphology with spherical particles. In addition, the as prepared nanozymes showed a narrow size distribution over 10.3-12.6 nm with an average size of 11.0 nm.

-for examples here your subtopic nonoenzymes but the description below the subtopic you refer as unmodified silver nanoparticles. My suggestion is to use unmodified silver nanoparticles since the topic in on silver nanoparticles.