Review of: "Determining kinetics parameters of bovine serum albumin-protected gold nanozymes toward different substrates"

Maria Alicia Biasutti[1]

1 Universidad Nacional de Río Cuarto

Potential competing interests: No potential competing interests to declare.

I consider that the present version of the manuscript is not acceptable for publication. Several corrections and improvements are necessary in the manuscript to make it acceptable.

The work is very limited in experiments and explanations. However, it can be improved.

Comments and suggestions

-The author does not clearly highlight the importance of the study carried out in this contribution.

-In section 3.1. Nanozyme characterization, the author says what the size is according to the distribution obtained by TEM, but this isolated data without any comment or comparison with another does not provide any relevant information. Perhaps a simultaneous study of the nanoparticles without the protein should have been done and compare.

I consider that the section on the characterization of the nanoparticles with the protein is totally incomplete.

-In the area of enzymology, the catalytic efficiency must be calculated by the relation k_{CAT} / K_M).

-The units of ε are M^{-1} cm^{-1} . Error in pag 3: (39000 M cm^{-1}, ε=5500 molar cm^{-1})

-In section 3.2. Kinetics Studies,

I suggest that the absorption spectra of the substrates as a function of time be shown before the figures of the graphs of Lineweaver–Burk

-The parameter obtained from the Michaelis–Menten treatment is K_M not K_m!!!!!-Several times is used the incorrect word “concertation” instead of concentration -In page 4, the author says: “in the presence of the BSA-gold nanozymes as the peroxidase-mimicking agents” there is no citation that validates this sentence. This is mentioned in the introduction, Ref 17, however more detail and explanation are necessary about this comment.-the catalytic efficiency must be discussed in term of k_{CAT} / K_M not in term of Vmax.-In the conclusions the author concludes that the different rates can be due to different oxidation mechanisms, what explanation can be given regarding the mechanism?-Writing should be improved