# Supplementary Material

## Experimental and in Silico Studies on the Development of an Electrochemical Biosensor for the Quantification of $H_2O_2$ Based on the ChOx Enzyme


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**Keywords:** cholesterol oxidase; hydrogen peroxide; sensing platform; molecular recognition; in silico studies

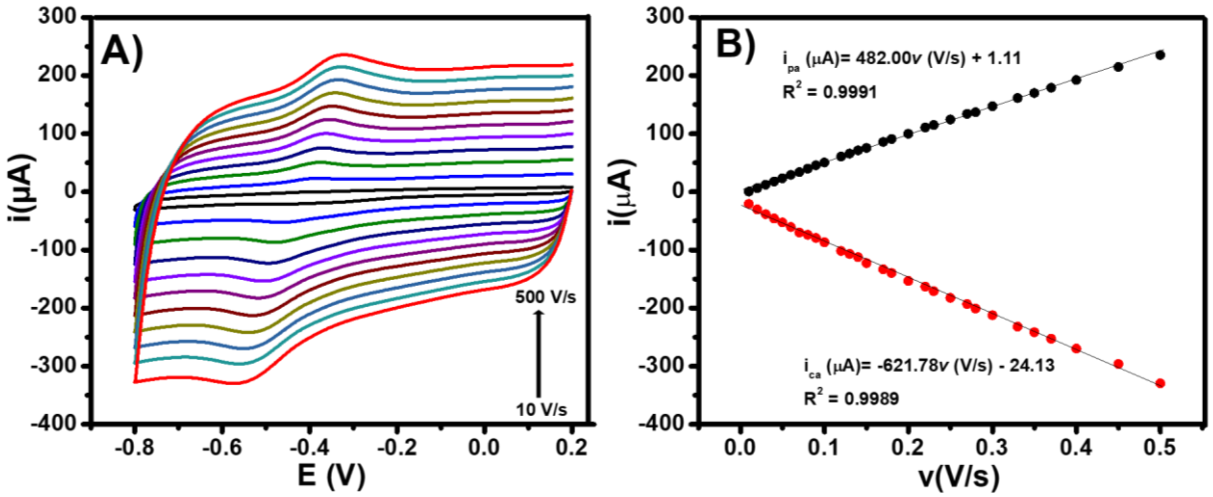


**Figure S1.** A) Cyclic voltammograms in PB at pH 7.4 in a potential window of -0.80 to 0.2 V, at different scan rates: 0.01, to 0.50 V/s. B). Peak current vs scan rate (*i vs v*).

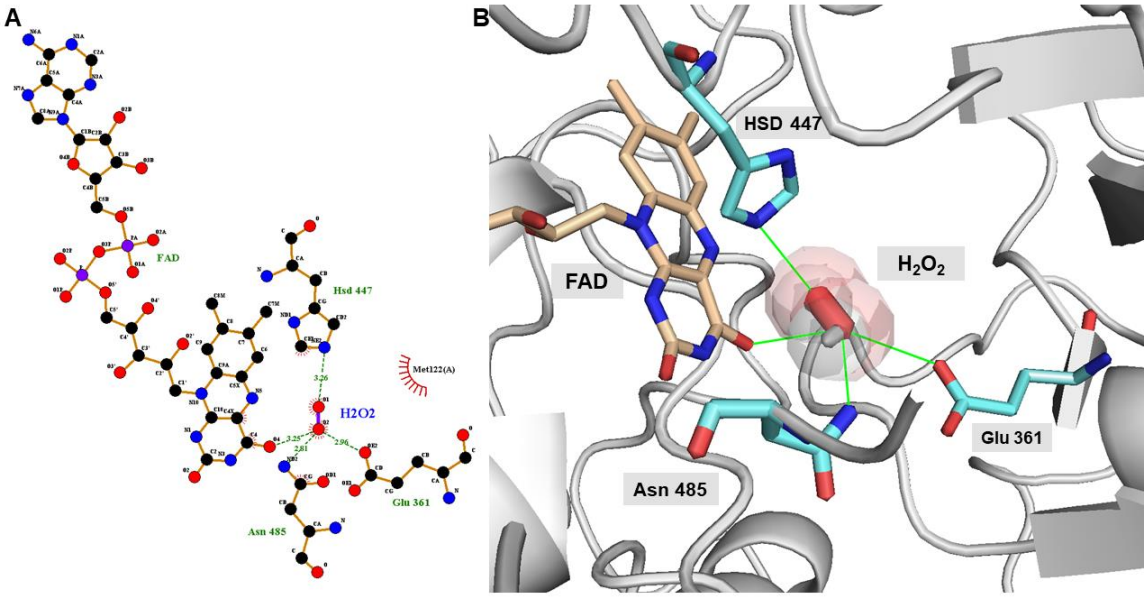


**Figure S2**. Schematic representation of the interaction of the FAD cofactor and $H_2O_2$ to cluster representative structure of ChOx: (A) Interaction diagram in 2D, showing hydrogen bonds (green color, dotted line) determined by LigPlot+ program [94]. (B) Interaction map in 3D, showing hydrogen bonds (green color line) determined by PyMOL 2.4 program [95]. HIS 447 changed to HSD 447 for the proton at Nδ on its side chain by PDB2PQR web server [96].

After performing the computational study of the molecular docking of ChOx and $H_2O_2$, it is corroborated that indeed there is an interaction of the hydrogen peroxide with the active center of the FAD enzyme. This allows us to affirm in more detail, that indeed the enzyme-$H_2O_2$.

## References


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