

Catalase Immobilized ZnO Nanorod with β -cyclodextrin Functionalization for Electrochemical Determination of Forchlorfenuron

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In this communication, we demonstrated a forchlorfenuron (FF) electrochemical biosensor based on a catalase immobilized ZnO nanorod with β -cyclodextrin functionalization (CA- β -CD-ZnO). CA was immobilized on the β -CD functionalized ZnO rods. The prepared CA- β -CD-ZnO was highly sensitive to the electrochemical reduction of H₂O₂. After introduction of FF into the H₂O₂ electrochemical detection system, the current change had a linear relationship with the FF concentration. Investigation showed the CA- β -CD-ZnO could be used for detecting FF in the concentration range between 0.005 to 2 μ M with a low detection limit of 0.002 μ M. Moreover, the CA- β -CD-ZnO was successfully demonstrated for FF detection in fruit samples.

Keywords: Catalase; ZnO rod; β -cyclodextrin; Forchlorfenuron; Electrochemical sensor

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