

## Chronoamperometric biosensor for cholesterol based on nickel hexacyanoferrate nanoparticles-gold nanowires -carbon nanotube-chitosan scaffolds modified on screen printed carbon electrode

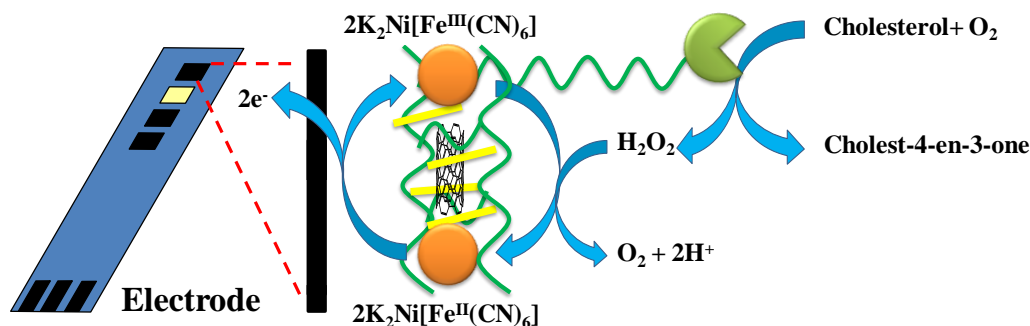
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A cholesterol biosensor has been constructed by immobilization of nickel hexacyanoferrate-gold nanowires-carbon nanotubes-chitosan scaffold (NiHCF-AuNWs-CNT-CHIT) on screen printed carbon electrode (SPCE) by drop casting method. The composite film of (NiHCF-AuNWs-CNT-CHIT) was formed and then the cholesterol oxidase (ChOx) was immobilized by physical adsorption on the electrode surface. The results showed a wide linear range of 10  $\mu\text{M}$  to 30 mM with a detection limit of 5.0  $\mu\text{M}$  (3 S/N) cholesterol. This method displayed excellent electrochemical signal and it exhibited a good repeatability (3.49 %RSD), fast response time (<1 s) and many time usages ( $n > 20$ ).



**Keywords:** Chitosan; Cholesterol oxidase; Gold nanowires; Screen printed carbon electrode; Nickel hexacyanoferrate