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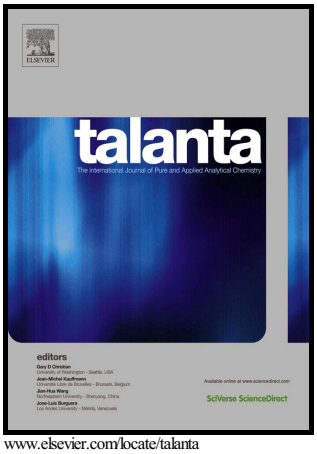

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ABSTRACT

A highly sensitive electrochemical biosensor based on the synthetized *L*-Cysteine-Ag(I) coordination polymer (*L*-Cys-Ag(I) CP), which looks like a protein-mimicking nanowire, was constructed to detect acetylcholinesterase (AChE) activity and screen its inhibitors. This sensing strategy involves the reaction of acetylcholine chloride (ACh) with acetylcholinesterase (AChE) to form choline that is in turn catalytically oxidized by choline oxidase (ChOx) to produce hydrogen peroxide (H_2O_2), thus *L*-Cys-Ag(I) CP