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Detection of ochratoxine A using square wave voltammetry on BDD film microcells

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In this work we used a planar electrochemical microcells micromachined in a microcrystalline BDD thin layer using a femtosecond laser. They were designed for fitting in a flow-through cell. This microcell was first derivatized by electrochemical reduction of *in situ* generated 4-carboxymethylaniline diazoniumsalt (4-CMA) in acidic aqueous solution and yielded stable monolayer. Horseradishperoxidase (HRP) was then immobilized making use of the carbodiimide chemistry, which offers a higher rapidity and simplicity in the manufacturing process of biosensors for OTA determination. The square wave voltametric oxidation current registered has been successfully related to the concentration of OTA in solution from different samples. Under the optimum conditions of the experimental variables, precision in terms of reproducibility and repeatability has been calculated in the concentration range 1 $pg.mL^{-1}$ to 25 $ng.mL^{-1}$, with a detection limit of 0.001 $ng.mL^{-1}$. A relative standard deviation for the slopes of 10% (n=4) was obtained for reproducibility. In the case of repeatability, the biosensor retained a 30% of the initial sensitivity after the third calibration.

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