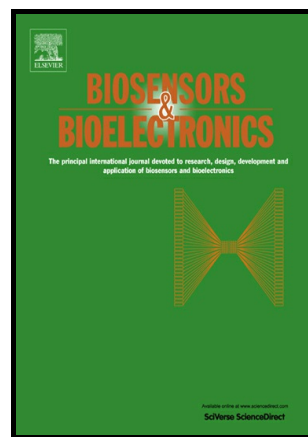


Molecularly imprinted electrochemical sensor based on Au nanoparticles in carboxylated multi-walled carbon nanotubes for sensitive determination of olaquinox in food and feedstuffs

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Molecularly imprinted electrochemical sensor based on Au nanoparticles in carboxylated multi-walled carbon nanotubes for sensitive determination of olaquinox in food and feedstuffs

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Abstracts

A novel molecularly imprinted electrochemical sensor (MIECS) was proposed to determine olaquinox (OLA) using gold nanoparticles in molecularly imprinted polymer (AuNPs@MIP) and carboxylated multi-walled carbon nanotubes (cMWCNTs). Glassy carbon electrode (GCE) was modified with cMWCNTs (cMWCNTs/GCE), and AuNPs/cMWCNT/GCE was obtained by electrodeposition on cMWCNTs/GCE using chronoamperometry in HAuCl_4 . Then, the obtained MIP/AuNPs/cMWCNTs/GCE was electropolymerized using OLA as template and o-PD as monomer to determine OLA. Important experimental parameters, namely, scan cycles, mole ratio of template molecules to functional monomers, pH value, and incubation time were optimized. The novel MIP sensor can offer a 2.7 nM of detection limit for OLA. In addition, a series of food and feedstuffs were analyzed to demonstrate the feasibility of MIECS.

Keywords:

olaquinox, carboxylated multi-walled carbon nanotube, Au nanoparticle, molecularly imprinted electrochemical sensor, electrochemical determination

1. Introduction

Olaquinox

[OLA;

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