

Sensitive determination of nitrofurantoin by flow injection analysis using carbon nanofiber screen printed electrodes

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In this work, a new method to quantify nitrofurantoin in aqueous media using a flow injection system connected to commercially available screen-printed carbon nanofibers was developed. A pretreatment of the screen-printed carbon nanofibers electrode with Britton-Robinson buffer/N,N-dimethylformamide was applied to enhance the nitrofurantoin peak current signal in one step. The developed method was demonstrated to be sensible, reproducible, easy, and inexpensive. With a low detection limit, it is applicable to real samples. The results indicate that it is highly applicable for the detection of nitrofurantoin in several matrices. When urine samples without any pretreatment were analyzed, the method proved reproducible and sensible and had a low detection limit. The use of screen-printed electrodes has advantages over other modified electrodes as a glassy carbon due to its versatility. © 2013 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim.