

عنوان مقاله:

The Dispersive Solid-Phase Extraction of Fluoxetine Drug from Biological Samples by the Amine-Functionalized Carbon Nanotubes with HPLC Method

محل انتشار:

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خلاصه مقاله:

A rapid and selective dispersive solid-phase extraction technique, by the combination of $\text{Fe}_3\text{O}_4@\text{MWCNT}$ -amine nanoparticles with HPLC (high-performance liquid chromatography), was expanded to detect the fluoxetine trace amounts in biological samples. The effective parameters on fluoxetine extraction were investigated by $\text{Fe}_3\text{O}_4@\text{MWCNT}$ -amine, and the optimum conditions for fluoxetine extraction were sample pH ۱۰.۰, adsorption time of ۲۸ min, and eluent (acidic methanol). Under the optimum extraction conditions, the limit of quantification (LOQ) and detection of limit (LOD) were found to be ۱۸ and ۶ $\mu\text{g L}^{-1}$, respectively. Likewise, a linear range method with the concentration of fluoxetine in the range of ۴۰–۸۰۰ $\mu\text{g L}^{-1}$ was applied. The analysis of several biological samples such as human plasma, urine, and tap water samples was successfully performed by applying the SPE method, which is an easy and sensitive method and an appropriate alternative for the analysis of fluoxetine.

کلمات کلیدی:

fluoxetine, $\text{Fe}_3\text{O}_4@\text{MWCNT}$, SPE, Dispersive solid phase extraction, HPLC-UV detection

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