

عنوان مقاله:

Preparation and application of graphene oxide-based sertraline-imprinted polymer on dispersive solid-phase extraction from biological samples

محل انتشار:

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خلاصه مقاله:

In this study, a graphene oxide-based imprinted polymer with sertraline as a template, methacrylic acid(MAA), γ -methacryloxypropyl trimethoxy silane (γ -MAPs) as a functional monomer, ethylene glycol dimethacrylate(EGDMA) as a cross- linker and 2,2 azobis isobutyronitrile (AIBN) as an initiator have been prepared through the crosslinkreaction of polymerization. The composite of molecularly imprinted polymer (MIPs) was fabricated onto the surface of SiO₂/graphene oxide (GO) after incorporation of vinyl group to lead further polymerization reaction. The synthesized MIP has been characterized by fourier transform infrared spectroscopy (FT-IR), scanning electron microscopy (SEM) and x-ray diffraction (XRD) analysis. Dispersive solid phase extraction (DSPE) procedure for the extraction of sertraline from urine and plasma samples using the prepared MIPs and non-imprinted (NIPs) was evaluated. The effect of different variables such as the sample pH of, extraction time, salt amount, sorbent amount, type and volume of eluent for desorption process were evaluated. Under optimal conditions linear dynamic range of method was 1-250 $\mu\text{g/L}$. The amount of relative standard deviation of proposed procedure was 11.1. Finally this method was applied to the determination of sertraline in plasma and urine samples and satisfactory relative recoveries were achieved.

کلمات کلیدی:

Graphene oxide, Sertraline-imprinted polymer, Dispersive solid phase extraction, Urine and plasma samples

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