

عنوان مقاله:

Sol-gel Approach for Fabrication of Polypropylene Solid-Phase Microextraction Fiber: An Efficient Method for Enrichment of Trace Levels of Antidepressant Drug, Fluoxetine

محل انتشار:

دوفصلنامه ایرانی شیمی تجزیه, دوره 2, شماره 1 (سال: 1394)

تعداد صفحات اصل مقاله: 7

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خلاصه مقاله:

This research is on the improvement of the procedure to determination of trace levels of antidepressant drug; fluoxetine in wastewaters. In this research a silica based sol-gel was applied for the extraction of fluoxetine from water samples. This two-phase technique is consisting of aqueous samples of fluoxetine (donor phase) and silica based nanocomposite prepared by sol-gel technique (acceptor phase). Acceptor phase was held in the pores and lumen of polypropylene hollow fiber segment. Microextraction experiments were carried out in two steps; extraction from analyte samples by sorbent which is held into the hollow fiber segment and desorption of drug from hollow fiber by using of methanol. Desorbed analyte in order to measurement were offered to HPLC and UV-V is spectrophotometer for further analysis. This method is simple, fast and adopted by a majority of the instrumental methods. Extraction parameters such as sol-gel aging time, pH of donor phase, volume of donor phase, extraction time, stirring rate and effect of surfactant were investigated and optimized. The measurements were done under the optimal conditions. This technique has many advantages, such as the short extraction time, low consumption of organic solvents, elimination of carry-over effect, low limit of detection and high pre-concentration factor. The pre-concentration factor and limit of detection have been gained 3227 and 0.53 ng mL⁻¹, respectively. The linear range and relative standard deviation are 1.0-10000.0 ng mL⁻¹ and 4.8% (n=3), respectively

کلمات کلیدی:

Fluoxetine; Solid Phase Microextraction; Sol-gel; Hollow Fiber

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<https://civilica.com/doc/630296>

