عنوان مقاله:

Electro membrane solid phase microextraction coupled with ion mobility spectroscopy for analysis of metronidazole in aqueous samples

محل انتشار:

دومین کنفرانس ملی پژوهش های نوین در علوم و مهندسی شیمی (سال: 1395)

تعداد صفحات اصل مقاله: 9

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خلاصه مقاله:

A stainless steel wire was platinized using electrophoretic deposition (EPD) method to create a higharea and cohesive surface. The platinized fiber was coated by PPY/GO nanocomposite byelectrochemical polymerization and applied in electro membrane solid phase microextraction (EMSPME)strategy, as a simple, efficient and low-cost analytical method for extraction and determination of metronidazole (as a basic drug) from aqueous sample. The ionic analyte wasextracted from an acidified aqueous solution (sample) on the sorbent (extractive phase) through an organic liquid membrane (LM) and under a constant DC potential. The extraction efficiency of analyte was evaluated by its ion mobility spectrometry (IMS) determination. Different importantexperimental variables that affect the efficiency of the developed EM-SPME method includingvolume and nature of membrane, pH, ionic strength, extraction time, and applied DC potential were studied and optimized. The linear dynamic range (LDR) was found to be in the range of 0.1-200 ngmL-1 (R2> 0.993) and the limit of detection (LOD) was obtained 0.01 ng mL-1. The recovery of theproposed EM-SPME-IMS method was calculated 95%. The relative standard deviation (RSD) for 6 repeated analyses of 1 ng mL-1 of analyte was calculated to be 9%. Finally, the proposed EM-SPMEIMS procedure was .successfully applied for the extraction and determination of metronidazole from aqueous media samples

کلمات کلیدی:

EM-SPME, PPy/GO coated fiber, metronidazole, IMS

لینک ثابت مقاله در پایگاه سیویلیکا: