

عنوان مقاله:

Speciation of chromium in blood samples based on dithioglycerol immobilized on carbon nanotube by dispersive micro solid phase bioextraction

محل انتشار:

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خلاصه مقاله:

A novel method based on the synthesis of dithioglycerol immobilized on carbon nanotubes (CNTs@DTG) was used for speciation of chromium (Cr III and Cr VI) in human blood samples by dispersive micro solid-phase bioextraction (D- μ -SPBE). By procedure, a mixture containing acetone and 1-octyl-3-methylimidazolium hexafluorophosphate ([OMIM][PF₆]) and CNTs@DTG were injected into 5 mL of standard and blood sample containing 1.0 μ g L⁻¹ of Cr III and Cr VI which was diluted with DW up to 10 mL at optimized pH. The Cr (VI) anions and Cr (III) cations were efficiently extracted by HS of CNTs@DTG at pH 2 and 6, respectively (HS.....Cr) and trapped into IL phase at the bottom of the conical tube. Then, Cr (III) and Cr(VI) ions were back-extracted from the IL/ CNTs@DTG to the aqueous phase by changing pH for each of them before determined by electrothermal atomic absorption spectrometry (ETAAS). Total chromium was calculated by summarizing Cr III and Cr VI content. The enrichment factor (EF), linear range and limit of detection (LOD) were obtained 9.85, 0.12-3.88 μ g L⁻¹ and 30 ng L⁻¹, respectively. Validation of the methodology was confirmed with standard addition to real samples and ICP-MS analysis.

کلمات کلیدی:

Chromium, Speciation, Blood sample, Dithioglycerol immobilized on carbon nanotubes, Dispersive micro solid phase bioextraction

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