

Preconcentration of Ultra-Trace Amounts of Copper(II) Applying Solid Phase Extraction on Novel Octadecyl Silica-Modified Membrane Discs

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A simple and reliable method for selective separation and preconcentration of trace amounts of Cu(II) ions from aqueous samples has been developed. Aqueous samples were passed through octadecyl silica membrane disc modified with a recently synthesised phenol-derivative Schiff's base. Cu²⁺ ions were adsorbed quantitatively. Almost all matrix components were passed through the disc. Retained Cu²⁺ ions were eluted from the disc using a minimum amount of hydrochloric acid as an eluent. They were subsequently determined applying atomic absorption spectrometry. Enrichment factors achieved in the proposed method were of about 200 and higher. Detection limit equalled 30 ng of Cu²⁺ per 1000 mL. The influence of various cationic interferences on the recovery of Cu²⁺ ions in binary mixtures was studied. The method was applied to the recovery studies of Cu²⁺ in synthetic samples and tap water.