Abstract:

In this study, simple and rapid dispersive liquid–liquid microextraction (DLLME) together with high performance liquid chromatography (HPLC) with photo diode array detector have been utilized for the determination of uranium in water samples. 1-(2-pyridylazo)-2-naphthol (PAN) was used as complexing agent. The effect of various parameters on the extraction step including type and volume of extraction and dispersive solvents, pH of solution, concentration of PAN, extraction time, sample volume and ionic strength were studied and optimized. Under the optimum conditions, the limit of detection and preconcentration factor were 0.3 μg L−1 and 194, respectively. Also, the relative standard deviation of the ten replicate was <2.6%. Then, this method was applied for the extraction and determination of uranium in the water samples.

Keywords: Uranium, Dispersive liquid–liquid microextraction, HPLC, Water samples.

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Determination of Uranium by Dispersive Liquid-Liquid Microextraction Method in Water Samples Using High-Performance Liquid Chromatography

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