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**Deep eutectic solvent based advance microextraction method for determination of
aluminum in water and food samples: Multivariate study**

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ABSTRACT

Preconcentration of aluminum Al^{3+} was carried out by a novel deep eutectic solvent based ultrasound-assisted liquid phase microextraction (DES-UALPME) method. The deep eutectic solvents (DESs), a green solvent was first time used for enrichment and quantification of very low concentration of Al^{3+} in water and food samples, prior to analysed by electrothermal atomic absorption spectrometry (ETAAS). In present method it was observed that % recovery of Al-8-hydroxyquinoline chelates efficiently extracted by DES solvent. Pre-enrichment factor and limit of detection were observed to be 50, and $0.032 \mu\text{g L}^{-1}$, respectively. Developed procedure was validated with the CRM (SLRS-5 river water) of Al and a good agreement was observed in results of measured value to the certified value. The RSD was calculated as 3.3%. The presented procedure was successfully carried out to different water and food samples.

Key words: Aluminium; Deep eutectic solvent; Ultrasonication; Dispersive liquid liquid microextraction; Electrothermal atomic absorption spectrometry

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