



Determination of Cadmium in water samples by Dispersive liquid-liquid microextraction Combined with UV–Visible spectrophotometry

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In this work, a method for extraction of Cd in water by dispersive liquid-liquid microextraction (DLLME) was developed. The sodium diethyldithiocarbamate (DDTC) was used as a chelating reagent. The Cd-DDTC complex was extracted and detected by UV-Visible spectrometry. The extraction conditions *i.e.* concentration of chelating reagent, pH of solution, volume of extraction solvent and disperser solvent, extraction time and salting out effect were optimized. Under the optimum condition, the calibration graph was linear in the range of 30-130 µg/L with R^2 of 0.9982. The limit of detection (LOD) and limit of quantitation (LOQ) were 4.2 µg/L and 14.2 µg/L, respectively. The relative standard deviation for repeatability study was less than 10 %. The recoveries were in the range of 81.29-108.74%. The proposed method was applied for determination of Cd in water samples collected from Map Ta Phut industrial estate, Rayong province.

Keywords: Cadmium; UV–vis spectrophotometry; dispersive liquid-liquid microextraction (DLLME)