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A Novel and Simple Deep Eutectic Solvent Based Liquid Phase Microextraction Method for Rhodamine B in Cosmetic Products and Water Samples Prior to Its Spectrophotometric Determination

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ABSTRACT

A novel and green deep eutectic solvent based liquid phase microextraction (DES-LPME) methodology has been proposed for the assessment of rhodamine B from cosmetic products and water samples. A deep eutectic solvent (DES) consist of tetrabutyl ammonium chloride-decanoic acid (1:2) as extraction solvent and tetrahydrofuran as emulsification agent were used for the microextraction of rhodamine B. The quantitative recoveries were achieved at pH 3 by using 0.3 mL of DES and 0.3 mL of THF. The rhodamine B concentration in last volume was analyzed by mirco-cuvette UV-VIS spectrophotometer at 550 nm. The limit of detection (LOD), limit of quantification (LOQ), preconcentration factor (PF) and relative standard deviation (RSD %) were found as $2.2 \mu\text{g L}^{-1}$, $7.3 \mu\text{g L}^{-1}$, 25 and 2.3 %, respectively. Accuracy and validity of the developed method was verified by addition-recovery studies for water and cosmetic samples.

Key-words: Deep eutectic solvents, Liquid phase microextraction, Rhodamine B, cosmetic products, UV-VIS spectrophotometer.

*This study is a part of PhD thesis of Erkan Yilmaz

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