

## Determination of Nine Preservatives in Food Samples by Solid Phase Extraction coupled with Capillary Electrophoresis

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An efficient method for sample treatment with solid phase extraction (SPE) and separation of components by capillary electrophoresis (CE) for simultaneous determination of nine preservatives in food samples was established. During the SPE, the effects of sample solution pH, extraction time, extraction temperature and salt dosage on extraction efficiency of nine preservatives were studied. The optimized parameters of SPE with 0.2 g hollow fiber in 10 mL sample solution were determined as follows: sample solution pH 5.5, extraction time 35 min, extraction temperature 45°C and NaCl 1.5 g. During the CE separation, the effects of pH and ionic strength of buffer solution, additional additives and separation voltage on the separation efficiency of eight pair preservatives were investigated. The selected CE separation solution is phosphate buffer solution (pH=6.5) containing 45 mmol/L NaCl and 25 mmol/L cyclodextrin, and separation voltage is 17 kV. All of nine preservatives have good linear relationship. Their detection limits were 0.5 - 1.0 µg/kg. The recoveries of four food samples were 83.2% - 116.7%. The sensitive and accurate method can be used to determine preservatives in food samples rapidly.

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**Keywords:** Preservative, Food sample, Solid phase extraction, Capillary electrophoresis

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