

## 毛细管区带电泳法同时分离测定香兰素和邻位香兰素异构体

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## Simultaneous separation and determination of vanillin and o-vanillin by capillary zone electrophoresis

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摘要

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**摘要** 建立了同时测定香兰素和其异构体邻位香兰素的毛细管区带电泳法(CZE)。考察了缓冲溶液的种类、浓度和pH以及分离电压等因素对分离结果的影响。在缓冲溶液为50 mmol/L硼砂-150 mmol/L磷酸氢二钠(pH 7.5)、分离电压15 kV的优化条件下,6 min内即可实现分离。香兰素和邻位香兰素在10~240 mg/L范围内线性关系良好,相关系数分别为0.9999和0.9997;方法的检出限均为1.0 mg/L (信噪比为3);样品的加标回收率为99.4%~101.2%,相对标准偏差为0.19%~0.73%。该方法操作简单、快速,已应用于实际样品的分析,并获得了令人满意的结果。

**关键词:** 毛细管区带电泳 香兰素 邻位香兰素 同分异构体

**Abstract:** A method for the simultaneous separation and determination of vanillin and o-vanillin by capillary zone electrophoresis (CZE) was developed. The influences of type, concentration and pH of running buffer, and applied voltage on separation were investigated. Under the conditions of 50 mmol/L borax-150 mmol/L disodium hydrogen phosphate (pH 7.5) and applied voltage of 15 kV, the vanillin and o-vanillin were separated in 6 min. The method was proved to be robust through verification of accuracy, precision and linearity. The calibration curves of vanillin and o-vanillin showed good linearity in the range of 10–240 mg/L, and the correlation coefficients were 0.9999 and 0.9997, respectively. The limits of detection for vanillin and o-vanillin were 1.0 mg/L (S/N=3). The average recoveries at three spiked levels were 99.4%~101.2% with acceptable relative standard deviations of 0.19%~0.73%. The method has been successfully used for the determination of vanillin and o-vanillin in real samples, and the assay results are satisfactory.

**Keywords:** capillary zone electrophoresis (CZE) vanillin o-vanillin isomer

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