

技术与应用

饮料中4种人工合成甜味剂同时测定的超高效液相色谱快速检测方法

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摘要 建立了采用超高效液相色谱同时测定饮料中4种甜味剂(安赛蜜、糖精钠、甜味素、纽甜)的方法。样品经简单的预处理后,通过ACQUITY UPLCTM BEH C18色谱柱分离,以乙腈-20 mmol/L磷酸二氢钠水溶液为流动相进行梯度洗脱,于220 nm波长下紫外检测。一次进样分析仅需6 min。4种甜味剂在0.5~20.0 mg/L范围内的线性关系良好,在加标水平为1, 10和20 mg/L时,被测物的回收率为80.5%~95.2%,相对标准偏差为0.50%~8.7%。

关键词 [超高效液相色谱](#) [人工合成甜味剂](#) [饮料](#)

Simultaneous determination of artificial sweeteners in beverage by ultra performance liquid chromatography

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Abstract

An ultra performance liquid chromatographic (UPLC) method for the simultaneous separation and determination of four artificial sweeteners (sodium saccharin, aspartame, acesulfame and neotame) in a single injection was developed. The separation was performed on an ACQUITY UPLCTM BEH C18column with gradient program and detection at 220 nm. The good linearities between the concentrations of all analytes and peak area responses were achieved over the range from 0.5 to 20.0 mg/L. The average recoveries in samples were 80.5%-95.2% with the relative standard deviations of 0.50%-8.7%. The method has been successfully applied to the determination of the four sweeteners in drinks and powdered tabletop sweeteners.

Key words [ultra performance liquid chromatography \(UPLC\)](#) [artificial sweeteners](#) [beverage](#)

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