

研究简报

凝胶柱净化-高效液相色谱检测食品中的苏丹红

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收稿日期 2005-3-28 修回日期 2005-6-7 网络版发布日期 2006-2-27 接受日期

摘要 建立了凝胶柱净化-高效液相色谱同时检测食品中苏丹红 I, II, III和IV的方法。样品用乙醇提取,提取液经 Bio-Beads SX3凝胶柱(200 mm×10 mm i. d.)净化,用环己烷-乙酸乙酯(体积比为1:1)洗脱。采用Symmetry Shield RP18柱(250 mm×4.6 mm i. d., 5 μm)分离,以100%甲醇为流动相,流速1.5 mL/min;用二极管阵列检测器检测,检测波长478 nm。上述4种苏丹红组分在其质量浓度为0.1~10.0 mg/L时有良好的线性关系($r>0.999$),方法的检测限为7~14 μg/kg;平均加标回收率为80.7%~96.3%(添加水平为0.25, 2.5 mg/kg),相对标准偏差为2.4%~5.9%。方法灵敏可靠,能满足食品中苏丹红检测的需要。

关键词 [凝胶柱](#) [高效液相色谱](#) [苏丹红](#) [食品](#)

分类号

Simultaneous Determination of Sudan Red Dyes in Foods by High Performance Liquid Chromatography with

Abstract

A method was developed for the simultaneous determination of Sudan Red I, II, III and IV in foods by high performance liquid chromatography (HPLC) with a clean-up procedure by gel column. Sample was extracted from foods with ethanol. The extract was cleaned up with a Bio-Beads SX3 gel column (200 mm×10 mm i.d.) and eluted with cyclohexane-ethyl acetate (1: 1, v/v). The analysis was performed on a Symmetry Shield RP18 column (250 mm×4.6 mm i.d., 5 μm) with 100% methanol as the mobile phase at a flow rate of 1.5 mL/min, detection at 478 nm and confirmation by diode-array spectra. All of the four compounds demonstrated good linear relationship ($r>0.999$) in the range of 0.1-10.0 mg/L. The limits of detection (LOD) were from 7 to 14 μg/kg. The average recoveries for all four dyes (spiked at the levels of 0.25 and 2.5 mg/kg) in chili sauce and sausage ranged from 80.7% to 96.3%, and the relative standard deviations were from 2.4% to 5.9%. The method is sensitive, reliable and can be applied for the analysis of four Sudan Red dyes in foods.

Key words [gel column](#) [high performance liquid chromatography](#) [Sudan Red dyes](#) [food](#)

DOI:

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