

研究简报

高效液相色谱法同时测定扁桃仁中的水溶性维生素C, B1, B2和B6

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摘要 建立了用高效液相色谱同时测定扁桃仁中4种水溶性维生素C, B1, B2和B6的方法。以酸水解法处理样品, 在Inertsil ODS-3柱(25 cm×4.6 mm i. d., 5.0 μm)上, 以0.05 mol/L KH₂PO₄ (pH 6.0)-甲醇(体积比为70:30)为流动相进行等度洗脱, 检测波长265 nm条件下, 对陕西蒲城扁桃仁中的水溶性维生素C, B1, B2和B6的含量进行了同时测定。4种水溶性维生素在其质量浓度为5.0~50 mg/L时线性良好($r=0.9990\sim 0.9997$);添加水平为5.0~20.0 mg/kg时, 平均回收率为91.77%~99.30%, 相对标准偏差($n=3$)为0.31%~1.98%。测得陕西蒲城产扁桃仁中维生素B2的含量为4.27~4.53 mg/kg, 维生素B1的含量为0.799~0.838 mg/kg, 未检出维生素C和维生素B6。该法简便、快速, 准确性和重现性均较好, 对果仁中水溶性维生素的测定具有一定的参考价值。

关键词 [高效液相色谱](#) [水溶性维生素](#) [扁桃仁](#)

分类号

Simultaneous Determination of Water-Soluble Vitamins C, B1, B2 and B6 in Almonds by High Performance

Abstract

A method has been developed for the simultaneous determination of four water-soluble vitamins C, B1, B2 and B6 in almond by high performance liquid chromatography. The contents of vitamins C, B1, B2 and B6 in almonds in Pucheng County, Shaanxi Province were determined under optimized conditions as follows. In the first step, the sample was prepared by acid hydrolysis. In the second step, the separation was performed on an Inertsil ODS-3 column (25 cm×4.6 mm i.d., 5.0 μm) with a mobile phase of 0.05 mol/L KH₂PO₄ (pH 6.0)-methanol (70: 30, v/v) and a detection wavelength at 265 nm. The linear ranges of four vitamins were within 5.0-50.0 mg/L ($r=0.9990-0.9997$). At the spike level ranged between 5.0-20.0 mg/kg, the average recoveries of the four vitamins in the Pucheng almond ranged from 91.77% to 99.30% with relative standard deviations between 0.31% and 1.98%. For vitamins B2 and B1, the contents were found to be 4.27-4.53 mg/kg and 0.799-0.838 mg/kg, respectively, while vitamins C and B6 were not discovered in Pucheng almonds. The method is simple, rapid, reproducible and accurate.

Key words [high performance liquid chromatography](#) [water-soluble vitamin](#) [almond](#)

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