

论文

中药郁金中无机离子的毛细管电泳法测定

陆玮洁, 主沉浮, 宋翠, 杨艳丽

山东大学化学与化工学院, 山东 济南 250100

摘要:

建立了一种用毛细管电泳间接紫外法同时测定郁金中7种金属离子(K+, Na+, Cu2+, Zn2+, Mn2+, Ca2+和Mg2+)的方法, 确定了最佳试验条件. 结果表明: 在214nm检测波长时, 以咪唑、2-羟基异丁酸和硫酸为背景电解质, 可使上述离子在10分钟内达到基线分离. 该方法表现出良好的重现性及稳定性, 方法的检出限为0.1~0.5mg/L, 对大多数离子来说, 迁移时间和峰面积重现性的相对误差分别小于0.4%和5%, 方法的线性范围为10-5~10-2mol/L (R2=0.991~0.998). 利用该方法对郁金中的7种离子进行了定量测定.

关键词: 郁金 无机离子 毛细管电泳

Determination of inorganic cations in the Chinese traditional drug Yujin by capillary electrophoresis

LU Wei-jie, ZHU Chen-fu, SONG Cui and YANG Yan-li

School of Chemistry and Chemical Engineering, Shandong Univ., Jinan 250100, Shandong, China

Abstract:

Yujin (tubers of Curcuma longa) is a type of Chinese medicinal herb which has good effects in invigorating the circulation of blood and preventing cancer and other chronic diseases. The simultaneous determination of K+, Na+, Cu2+, Zn2+, Mn2+, Ca2+ and Mg2+ by capillary electrophoresis with indirect UV detection was studied in a background electrolyte system composed of imidazole, 2-hydroxy isobutyric acid (HIBA) and sulfuric acid. All ions were baseline resolved within 10 min. The applicability of this method was tested by investigations of reproducibility and linearity of the calibration. The detection limit is in the range 0.1~0.5mg/L. The reproducibility is less than 0.4% for migration time and less than 5% for the peak area of most inorganic cations. The calibration graphs are linear for most ions in the concentration range of 10-5~10-2 mol/L (R2=0.991~0.998). The quantitative determination of the seven ions in Yujin was well carried out by using the developed method.

Keywords: tubers of Curcuma longa inorganic cations capillary electrophoresis

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通讯作者: 陆玮洁

作者简介:

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