

亲水作用色谱法测定葫芦巴中的葫芦巴碱

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Determination of trigonelline in Trigonella foenum-graecum L interaction chromatography

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摘要

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摘要 建立了亲水作用色谱法(HILIC)测定葫芦巴药材中葫芦巴碱含量的方法。采用Waters Atlantis HILIC Silica色谱柱(150 mm×3 μm),以乙腈-乙酸铵溶液(pH 4.4)(体积比为70:30)为流动相,流速0.4 mL/min,检测波长265 nm。葫芦巴碱的线性范围为2.50 (r=0.9996);两个加标水平的平均加样回收率为102%,相对标准偏差(RSD)分别为4.17%和2.28%(n=3)。结果表明所建方法分离迅速,可以弥补中国药典中离子对色谱法(IPLC)平衡时间过长的缺陷,适用于葫芦巴药材中强极性葫芦巴碱的测定,为葫芦巴的质量控制提供有效的方法。

关键词: 亲水作用色谱法 葫芦巴碱 葫芦巴 中药材

Abstract: A method of hydrophilic interaction chromatography (HILIC) was established for the quantitative determination of trigonelline in Trigonella foenum-graecum L. HILIC analysis was performed on a Waters Atlas Silica column (150 mm×2.1 mm, 3 μm). The mobile phase consisted of acetonitrile-ammonium acetate (pH 4.4) v/v), and the flow rate was 0.4 mL/min. The detection wavelength was set at 265 nm. The method has good linearity in the range of 2.50~100 mg/L for trigonelline (r=0.9996). The recoveries were on an average of 102% by adding 2.50 mg/L and 43.8 mg/L with relative standard deviations (RSDs) of 4.17% and 2.28% (n=3), respectively. The results indicate that the method is simple and rapid for the determination of strong polar trigonelline in Trigonella foenum-graecum L. Furthermore, it significantly reduces the equilibration time compared with ion-pair liquid chromatography (IPLC) recorded in the Pharmacopoeia of China. This new method can be used as a valid method for the quality control of Trigonella foenum-graecum L.

Keywords: hydrophilic interaction chromatography (HILIC) trigonelline Trigonella foenum-graecum L. traditional Chinese medicine (TCM)

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