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论文

超临界流体萃取法测定川芎中藁本内酯含量的研究

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摘要:

系统研究了压力、温度、静态萃取时间、动态萃取量、改性剂加入量等因素对超临界流体萃取(SFE)中药川芎中藁本内酯的影响,确定最佳萃取条件为:压力27.6MPa,温度40℃,静态萃取时间3min,动态萃取量7ml,改性剂加入量0.1ml。并对超临界流体萃取的收集方法作了研究,发现固液收集法在收集效率和精密度方面比溶剂收集法效果好。并用离线的SFE RPHPLC对川芎药材中藁本内酯的含量进行了测定。

关键词: 超临界萃取 固液收集 川芎 藁本内酯 高效液相色谱法

THE DETERMINATION OF LIGUSTILIDE IN *LIGUSTICUM CHUANXIONG* HORT. BY SUPERCRITICAL FLUID EXTRACTION

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Abstract:

In this study, a systematic method was used to optimize the supercritical fluid extraction (SFE) of ligustilide in *Ligusticum chuanxiong* Hort. Overall five variables (pressure, temperature, static extracting time, modifier concentration and CO_2 dynamic extracting volume) were considered. To reduce the loss of volatile substance, a solid liquid trap was developed for SFE collection. Comparisons were made on the solvent trap for SFE. The extracts were analyzed by high performance liquid chromatography (HPLC) with ultraviolet absorbance detection. The recoveries of 99.34% (RSD 1.70%) and 92.11% (RSD 5.72%) were achieved for solid-liquid trap and solvent trap, respectively. SFE conditions: temperature 40℃, pressure 27.6 MPa, static extraction 3 min, dynamic extraction 7 ml and 0.1 ml $CHCl_3$ as modifier.HPLC conditions: The HPLC column (3.9 mm×150 mm)was packed with Nova-Pak C_{18} (4 μm). Naphthalene was used as internal standard. The mobile phase was methanol—10% isopropyl alcohol solution (53∶47 *v*/*v*). The detection wavelength was 280 nm and the flow rate was 0.8 ml·min^{-1}.

Keywords: Supercritical fluid extraction Solid-liquid trap Ligustilide *Ligusticum chuanxiong* Hort HPLC

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