

研究简报

# 超临界CO<sub>2</sub>流体萃取法与水蒸气蒸馏法提取荆芥穗挥发油化学成分的研究

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**摘要** 采用超临界CO<sub>2</sub>萃取法(SFE)与水蒸气蒸馏法(SD)从荆芥穗中提取挥发油。采用SE-54毛细管柱进行分析,用气相色谱-质谱法对挥发油中各种化学成分进行鉴定,用归一化法测定各组分的含量。色谱条件:SE-54毛细管柱(30 m×0.25 mm i. d., 0.25 μm),柱温50 °C(3 min)5 °C/min180 °C(2 min)10 °C/min260 °C(50 min);分流进样,分流比1:50;进样口温度280 °C。在采用超临界CO<sub>2</sub>萃取法提取的挥发油中共鉴定出54种成分,其主要成分为长叶薄荷酮、薄荷酮、亚油酸氯化物等;在水蒸气蒸馏法提取的挥发油中共鉴定出39种成分,其主要成分为长叶薄荷酮、薄荷酮、柠檬烯等。超临界法较水蒸气法更加稳定可靠,重现性好,适用于中药挥发油的化学成分分析。

**关键词** [超临界流体萃取](#) [水蒸气蒸馏](#) [气相色谱-质谱](#) [荆芥穗](#) [中草药](#)

分类号

## Comparison of Supercritical Fluid Extraction and Steam Distillation Methods for the Extraction of Essential

### Abstract

Essential oil was extracted from *Schizonepeta tenuifolia* Briq. by supercritical fluid extraction (SFE) and steam distillation (SD). The components extracted were determined by gas chromatography with area normalization method and identified by gas chromatography-mass spectrometry (GC-MS). The optimal chromatographic conditions were: capillary column, SE-54 (30 m×0.25 mm i.d., 0.25 μm); column temperature, 50 °C(3 min)5 °C/min180 °C(2 min)10 °C/min260 °C(50 min); split injection, split ratio 1: 50; injector temperature, 280 °C. Fifty-four components were identified for the essential oils extracted by SFE, and its main components were found to be pulegone, menthone, linoleic acid chloride etc. Thirty-nine components were identified for the essential oil obtained by SD, and its main components were found to be pulegone, menthone, limonene etc. The SFE method is better than the SD method in reliability stability and reproducibility, and is thus well suitable for similar applications involving for extraction of other traditional Chinese herbal medicines.

**Key words** [supercritical fluid extraction](#) [steam distillation](#) [gas chromatography-mass spectrometry](#) [Schizonepeta tenuifolia Briq.](#) [traditional Chinese herbal medicine](#)

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