

莪术挥发性成分的 GC – MS 分析*

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摘 要:**目的** 对莪术挥发性成分进行定性分析,探究莪术挥发油的主要组成。**方法** 采用气相 – 质谱联用色谱法进行定性分析,使用 Agilent 19091S – 433.93.92873 HP – 5MS 5% Phenyl Methyl silox – 60℃ – 325℃ (325℃) (0.25μm×0.25 mm×30 m) 色谱柱;程序升温:初始温度 68℃,保持 3 min,以 5℃/min 升至 160℃,以 7℃/min 升至 220℃,保持 15 min;载气流速 2.0 mL/min;分流进样,进样口温度:250℃,进样量 1 μL;GC – MS 用载气为高纯氦气(≥99.999%),质谱条件为 EI 源,轰击电压 70eV,正离子模式,质量扫描范围 50 ~ 550 amu,离子源温度 230℃。**结果** 分析 5 个批次的莪术挥发油样品后,鉴定出了 44 种成分。**结论** 莪术挥发油成分复杂,其中主要组成成分为烯酮、烯烃、芳香烃类物质,其中表莪术呋喃烯酮、莪术二酮、吉马酮、莪术烯、β – 榄香烯含量较为丰富,可为莪术挥发油及其相关制剂的质量控制研究提供科学基础。

关键词: 莪术;挥发油;气相色谱 – 质谱联用;定性分析;质量控制
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A GC – MS Analysis of the Volatile Components of Curcuma Zedoaria

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Abstract: Objective To make a qualitative analysis of the volatile components of curcuma zedoaria in order to explore the ingredients of the volatile oil of the curcuma zedoaria. **Method** Gas – mass spectrometry was used for qualitative analysis by the chromatographic column of Agilent 19091S – 433.93.92873 HP – 5MS 5% Phenyl Methyl silox – 60℃ – 325℃ (325℃) (0.25μm×0.25 mm×30 m. temperature programming: to keep the initial temperature of 68℃ for 3 min and then raise the temperature to 160℃ at the speed of 5℃/min, finally to 220℃ and remain for 15 min and the carrier gas flow rate is 2.0ml /min. Shunt injection, inlet temperature: 250℃, injection volume: 1 curfew;The carrier gas used for GC – MS is high purity helium (≥99.999%). The mass spectrometry condition is EI source, the bombardment voltage is 70eV, the positive ion mode, the mass scanning range is 50 ~ 550 amu, and the ion source temperature is 230℃. **Result** After analyzing 5 batches of volatile oil samples, 44 components were identified. **Conclusion** The volatile oil of zedoary is complex in composition, among which the main components are enone, olefin and aromatic hydrocarbons. The contents of zedoary furanone, zedoary diketone, jermadone, zedoary and anyl – elemene are relatively rich, which can provide a scientific basis for the quality control of the volatile oil of zedoary and its related preparations.

Keywords: rhizoma zedoariae; volatile oil; gas chromatography – mass spectrometry; qualitative analysis; the quality control

莪术为姜科植物蓬莪术 *Curcuma phaeocaulis* Val.、广西莪术 *Curcuma Kwangsiensis* S. G. Lee et

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