

Full Papers

新鲜温郁金中姜黄与莪朮挥发性成分的顶空-气相色谱-质谱联用对比分析

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摘要 本文用顶空-气相色谱-质谱的方法测定了温郁金的不同药用部位:莪朮与姜黄,有60多种挥发性化合物被检测到,通过NIST谱库检索结合保留指数数据分别定性了其中51和48种挥发性成分。实验中用 β -榄香烯作为外标进行相对定量分析,比较了不同产期莪朮中挥发油含量的变化,从而有利于最佳采收时间的确定。对于同产期的温郁金的不同药用部位:莪朮和姜黄,本文也进行了比较,它们的有效成分相似,但是含量有差别。用H/D交换的方法进一步确定了含活泼H的化合物, γ -萜品烯在烯丙位也发现了很明显的H/D交换,通过裂解途径的分析本文确定了H/D交换的位置。这种方法不仅可以用于含挥发油成分的药用植物有效成分的定性,还可以用于它们有效成分的相对定量。

关键词 [温郁金](#) [顶空](#) [GC-MS](#) [H/D交换](#) [挥发性成分](#)

分类号

Comparative Analysis of the Volatile Components in the Fresh Roots and Rhizomes of *Curcuma wenyujin* by Static Headspace Gas Chromatography Mass Spectrometry

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Abstract Static headspace GC-MS method coupled with H/D exchange was firstly developed to determine and identify the volatile components in the fresh root and rhizome of *Curcuma wenyujin*. The TIC chromatograms of 3 batches of fresh roots harvested at different time showed significant difference in the volatile components: the constitution was the same but the content of them was different. More than 60 volatile components in fresh roots (Root of *C. wenyujin*) and rhizomes (Rhizome of *C. wenyujin*) of *C. wenyujin* were detected, of which 51 and 48 volatile components were identified respectively. The fresh roots and rhizomes of *C. wenyujin* were found to have the similar volatile components. The contents of these components were calibrated by the response of β -elemene. In addition, the principal active component, β -elemene, was further confirmed and relatively quantified by its standard. γ -terpinene showed obvious allylic hydrogen/deuterium exchange using deuterium oxide which gave a new method to identify some compounds containing allylic hydrogen. At the same time, the active hydrogen compounds were also further confirmed. The results show that HS-GC-MS method is a fast, simple and efficient way for the analysis of volatile components from medical plants.

Key words [Keywords](#) [Curcuma wenyujin](#) [static headspace](#) [GC-MS](#) [H/D exchange](#) [volatile component](#)

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