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HS-SPME-GC-MS技术对栝楼雌、雄花挥发性成分的差异研究

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中文摘要:目的: 对栝楼的花进行挥发性成分的比较和分析, 指出雌、雄间的特征性差异。方法: 在同一地点采集完全绽放的雌花和雄花, 利用顶空固相微萃取技术(HS-SPME)富集挥发性成分, 采用气质联用(GC-MS)进行分离和鉴定。结果: 从栝楼雌、雄花中分别分离到52、45个色谱峰, 共鉴定47个化合物, 采用峰面积归一化法测定了各化学成分的含量。芳樟醇、 α -金合欢烯、苯甲醇、(Z)-2-甲基丁烯醇是栝楼花主要的挥发性成分; 芳樟醇、 α -金合欢烯在雌花中的含量显著高于在雄花中的含量, 而苯甲醇在栝楼雄花中的含量显著高于在雌花中的含量。结论: 首次对栝楼属植物的花进行了化学成分的研究, 有37个化合物系该属植物中的首次报道; 芳樟醇、 α -金合欢烯、苯甲醇在雌、雄花中相对应的高低现象揭示了栝楼雌、雄花在挥发性成分方面的特征性差异, 丰富了雌雄异株植物的基础研究。

中文关键词: [栝楼](#) [雌雄异株](#) [花](#) [顶空固相微萃取](#) [气相色谱-质谱](#)

Difference of volatile constituents contained in female and male flowers of *Trichosanthes kirilowii* by HS-SPME-GC-MS

Abstract: Objective: To compare and analyze volatile constituents from flowers of *Trichosanthes kirilowii*, in order to point out characteristic differences between female and male flowers. Method: Blooming female and male flowers were collected in the same place. Volatile constituents were extracted from the flower by solid phase micro-extraction (SPME), then separated and analyzed by gas chromatography-mass-spectrometry (GC-MS). Result: Fifty-two and forty-five chromatographic peaks were separated from the female and male flowers, respectively. Forty seven constituents were identified and their relative percentage compositions were determined with the peak area normalization method. Linalool, α -farnesene, benzene methanol, and (Z)-2-methylbutanal oxime were the main volatile constituents. The contents of linalool and α -farnesene in female flower were remarkably higher than those in male. In contrast, the content of benzene methanol in male flower was remarkably higher than that in female. Conclusion: In the first study on chemical constituents from flowers in genus *Trichosanthes*, 37 compounds are separated from *T. kirilowii*. Contents of linalool, α -farnesene and benzene methanol show the characteristic differences of volatile constituents contained in male and female flowers of *T. kirilowii*, which enriches the basic studies on dioecious plant.

keywords: [Trichosanthes kirilowii](#) [dioecious plant](#) [flower](#) [oxime](#) [headspace solid-phase microextraction-GC-MS](#)

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