

葛花各種萃取物之抗氧化性及水蒸汽蒸餾精油與 超臨界二氧化碳萃取物之組成成分

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摘 要

本研究探討葛花之揮發性成分及各種萃取物之抗氧化性，葛花粉末利用水蒸汽蒸餾-溶劑萃取法及超臨界二氧化碳萃取法萃取揮發性成分，並分析其化學組成及檢測揮發性成分與葛花不同溶劑萃取物之抗氧化性。結果顯示，葛花揮發性萃取物經 GC 及 GC-MS 分離鑑定，共鑑定出 42 種化合物，其中醇類 12 種、酯類 8 種、酮類 6 種、烯類 5 種、脂肪酸類 5 種、醛類 2 種、萜烯類 2 種、烷類及醚類各 1 種等。葛花以超臨界二氧化碳萃取於 5000psi、60°C 有較高的萃取率，於 4000psi、60°C 及濃度 1mg/ml 有較好的 DPPH 自由基清除率(60.4%)。各種萃取物抗氧化性利用硫氰酸鐵法檢測，其強弱依序為 BHA > 乙酸乙酯萃取物 > α -生育醇 > 水蒸汽蒸餾-溶劑萃取物 > 甲醇萃取物 > 正己烷萃取物 > 控制組 > 超臨界二氧化碳萃取物。

關鍵詞：葛花、水蒸汽蒸餾、超臨界二氧化碳萃取、溶劑萃取、抗氧化性、揮發性成分組成

Antioxidant Activity of Extracts and Volatile Compositions of Steam Distilled Essential Oil and Super Carbon Dioxide Extracts from *Pueraria lobata* flowers

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Abstract

The purpose of this study was to investigate antioxidant activity and volatile components of *Pueraria lobata* flowers. The volatile extract was obtained from *Pueraria lobata* flowers by Likens-Nickerson extraction and supercritical carbon dioxide extraction. It was isolated and identified by gas chromatography (GC) and gas chromatography-mass spectrometry (GC-MS). The 42 components of the volatile extracts had been identified, including 12 alcohols, 8 esters, 6 ketones, 5 alkylenes, 5 aliphatic acids, 2 aldehydes, 2 terpenes, 1 alkane and 1 ether. Among supercritical carbon dioxide extracts at various pressure and temperature conditions, supercritical carbon dioxide extract at 5000 psi, 60°C showed the highest yield, and the extract at 4000psi, 60°C had the strongest scavenging effect on DPPH radical. The antioxidant activity of the volatile extract and the various solvent extract was analyzed by the ferric thiocyanate method. The order of antioxidant activity was: BHA > ethyl acetate extract > α -tocopherol > Likens-Nickerson extraction > volatile extracts > methanol extract > n-hexane > control > supercritical carbon dioxide extract by the ferric thiocyanate method.

Key words: *Pueraria lobata*, flowers, stem distillation, supercritical carbon dioxide extraction, solvent extraction, antioxidant activity, volatile composition