菊花花部抗氧化活性成分之研究

Studies on the Antioxidant Constituents from the Flowers of Chrysanthemum morifolium

中文摘要

菊花（Chrysanthemum morifolium）屬菊科多年生草本，原產於中國，爲民間用藥上具有利尿、疏風、解熱以及明目的效果。我們將其花部之丙酮萃取物利用乙酸乙酯與二次水分配萃取，再將乙酸乙酯層減壓濃縮後以重力管柱層析（open column chromatography）粗分，接著利用薄層層析法(thin layer chromatography) 、高效能液相層析法（high performance liquid chromatography）等方法，分離純化得到八個化合物，其中含有五個 Flavonoids 類化合物分別爲： Naringenin (1) , Apigenin 7-O-β-glucopyranoside (2) , Luteolin (3) , Luteolin 7-O-β-glucopyranoside (4) , Diosmetin 7-O-β-glucopyranoside (5)；一個 caffeic acid 衍生物爲：3,5-di-O-caffeoylquinic acid (6) , 以及一個 steroid 類化合物 β-sitosterol-D-glucoside (7) ；和一個待解的化合物 CMF-EE-2 (8)，以上結構均經由光譜分析與文獻比對而決定。

另外在抗氧化活性部分，我們做了 DPPH 清除自由基試驗以及 SOD-like 和 hydroxy radical 的清除試驗，發現化合物 Luteolin 7-O-β-glucopyranoside (4)和待解的化合物 CMF-EE-2 (8)具有很好的抗氧化活性。

英文摘要

Chrysanthemum morifolium, Compositaceous plants, are growing in China, and used as diuretic and analgesic agents. The acetone extracts of C. morifolium flower parts were partitioned with ethyl acetate and H2O. The EtOAc layers were evaporated and gave the residues. The residues were separated and gave eight compounds.

These compounds, including five flavonoids, Naringenin (1), Apigenin 7-O-β-glucopyranoside (2), Luteolin (3), Luteolin 7-O-β-glucopyranoside (4), and Diosmetin 7-O-β-glucopyranoside (5); a caffeic acid derivates, 3,5-di-O-caffeoylquinic acid (6); a steroid, β-sitosterol-D-glucoside (7); together with a unknown compound, CMF-EE-2 (8), were elucidated by compare with spectroscopic and literature data.

Additionally, the antioxidant activities of these compounds were assayed. Among them, compounds (4) and (8) exhibited significant antioxidant activity in DPPH, SOD-like, and hydroxy radical scavenging assays.