南嶺蕘花活性成分之鑑定及其誘導人類白血病U937細胞凋亡與分化之機制

蔡瑞騏、廖慧芬 ; 謝淳仁

E-mail: 9318470@mail.dyu.edu.tw

摘 要

南嶺蕘花 (Wiktstroemia indica C. A. Mey) 屬於瑞香科植物。分佈於台灣全境低海拔山地之叢林蔽蔭下。於中國民俗療法中，常利用南嶺蕘花做為抑制腫毒、關節炎、結核病、梅毒、與百日咳之治療。本研究利用南嶺蕘花之莖部，探討其化學成分及生物活性。結果純化出一屬於dicoumarin類的化合物daphnoretin及具有抗白血病之成分AF (Active Fraction)。南嶺蕘花的活性成分AF 31.3 ng/mL之劑量下直接作用於人類骨髓性白血病U937細胞，可造成U937細胞約80%之生長抑制率，但daphnoretin並沒此一生物活性。利用流式細胞儀分析其細胞週期，結果發現能夠造成細胞週期停滯於G0/G1期。AF (31.3 ng/mL) 可促進U937細胞達70%以上分化為單核球/巨噬細胞，75%以上的細胞表現NBT之還原活性，70%以上的細胞具有吞噬酵母菌的能力，以及70%的細胞表現出單核球表面抗原CD11b。同時亦伴隨有少量的凋亡細胞產生，以流式細胞儀分析結果發現，約16%之Sub-G1表現，且呈現劑量及時間依賴的關係。經由mitogen-activated protein kinase (MAPK) 抑制劑的分析，PD98059會影響AF對U937細胞生長與分化的作用，因此推論AF對U937細胞內訊息傳遞之機轉主要是透過MEK/ERK2之路徑。綜合以上結果，南嶺蕘花的活性成分AF能有效地抑制白血病細胞株U937之增生，以及誘導細胞之分化，而此作用機制可能與MAPK之途徑有關，是具有潛力之天然抗白血病藥物。

關鍵詞 : 南嶺蕘花 ; 白血病 ; 細胞分化 ; 細胞凋亡 ; Mitogen-activated protein kinase

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