

and puerarin on TNF- α induced ICAM-1 and VCAM-1 expression were tested by ELISA, immunofluorescence staining and Western blotting. Their inhibitory effects on cell-cell adhesion between endothelial cells and monocytes were also determined. Results showed that no significant cytotoxicity was observed for treatment with 1-100 μ M puerarin. At 1-30 μ M neither daidzein nor daidzin showed cytotoxicity to endothelial cells while both of them showed obvious cytotoxicity at 100 μ M. Cell-ELISA results revealed that all of these three isoflavonoids compounds from Gegen could significantly inhibited TNF- α induced ICAM-1 expression in, a dose-dependent manner. Immunofluorescence staining and Western blotting showed similar results as observed in cell-ELISA. In summary, all these results suggested that Gegen (*Radix Puerariae*) may reduce atherosclerosis through inhibiting endothelial ICAM-1 and VCAM-1 expression .

Keywords: Puerarin, Daidzin, Daidzein, HUVEC, Anti-atherosclerosis.

摘要

動脈粥樣硬化 (Atherosclerosis, AS) 是以富含脂肪的斑塊在大動脈壁聚積為特徵的系統病變, 是心腦血管病的主要病理基礎。動脈粥樣硬化形成原因相當複雜, 現代醫學關於 AS 的病因較一致的看法是由損傷、炎症、免疫功能障礙三者相結合作用的結果^[1]。其主要臨床表現是心肌梗塞、中風和外周血管疾病, 常伴有高血壓、高膽固醇血症或糖尿病等。動脈粥樣硬化導致的疾病是發達國家第一位的死亡原因^[2]。在我國, 隨著經濟社會的發展和人口的老齡化, 心腦血管病發病率與死亡率近年也顯著增加。

中藥含有的諸多成分, 具有多環節、多靶點作用的性質, 對機制複雜的動脈粥樣硬化有更好更全面的防治作用。越來越多的報導說明中藥葛根具有抗動脈粥樣硬化的藥理作用, 但在葛根怎樣抗動脈粥樣硬化作用上還沒有清晰的闡釋。本

文以人臍靜脈內皮細胞(HUVEC)作體外模型詳細描述葛根異黃酮類提取物是如何抗動脈粥樣硬化。首先以MTT細胞計數的方法篩選出葛根異黃酮類化合物作用於HUVEC的有效濃度,並同時完成毒性篩選。在細胞黏附實驗中,葛根提取物對THP-1細胞與HUVEC的黏附作用有明顯抑制。在ELISA實驗中,檢測出大豆苷元(daidzein)、大豆苷(daidzin)、葛根素(puerarin)三種主要異黃酮類提取物具有明顯的抑制炎症因數ICAM-1等的表達的作用。在western blot實驗中,檢測出大豆苷元(daidzein)、大豆苷(daidzin)、葛根素(puerarin)低、中、高濃度對炎症因數ICAM-1等的表達有不同程度的抑制。另外,還通過螢光顯微觀察,進一步證實葛根提取物對ICAM-1等炎症因數表達的抑制作用。以上研究表明葛根提取物具有抗動脈粥樣硬化的作用。

關鍵字：葛根，異黃酮類提取物，人臍靜脈內皮細胞，抗動脈粥樣硬化