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• 計畫英文名稱	Studies on the Inhibitory Effects of Tannins on HMG-CoA Reductase		
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• 中文關鍵字	HMG-CoA 還原脢抑制劑；鞣質；類黃酮；高血脂症；動脈粥樣硬化		
• 英文關鍵字	HMG CoA reductase inhibitor；Tannin；Flavonoid；Hyperlipidemia；Atherosclerosis		
• 中文摘要	動脈硬化相關疾病在許多國家仍是最重要致死原因。高脂血症是導致動脈硬化的重要因子。降血脂藥如 HMG-CoA reductase 抑制劑，可降低冠狀動脈疾病死亡率。Flavonoids 是富含於蔬果，紅酒及綠茶中天然抗氧化物質。以前的研究顯示一些抗氧化劑有降血脂的效果而 Flavonoids 服用會降低冠狀動脈疾病死亡率。本研究的目的即探討從中草藥分離出的 Flavonoids 成份是否有抑制 HMG-CoA reductase 的作用。培養中的非洲綠猴腎細胞(Vero cell lines)是過去研究 HMG-CoA reductase 抑制劑的材料，在加入 Pravastatin 之後，細胞生長會被抑制。但在加入 1 mM mevalonate 之後，這種抑制作用會減少。從中草藥分離出來的 Flavonoid compounds (Flavonols, Flavones, Flavanones)加入含有或沒有 mevalonate 的 Vero cells 中，觀察細胞生長情形。在約 40 多種 Flavonoid 物質中，只有黃鹼醇(Flavonol group)中的 Astilbin 有類似 Pravastatin 抑制 Vero cells 生長的作用。本研究發現在某些中草藥萃取出的 Flavonoid 成份有類似 HMG-CoA reductase inhibitor 的作用，可提供未來中草藥降血脂效用研究上的參考。		
• 英文摘要	Epidemiological studies have shown that hypercholesterolemia is a major risk factor for coronary heart disease. In clinical trials of lipid lowering therapy, 3-hydroxy-3-methylglutaryl Coenzyme A (HMG-CoA) reductase inhibitor has been shown to decrease cardiac events and mortality. Flavonoids are polyphenolic natural antioxidants existing in vegetables, fruits and beverages such as tea and wine. Previous studies have shown that some antioxidants had hypocholesterolemic effect, and flavonoid intake was associated with the decrease of mortality from coronary artery disease. The aim of this study was to evaluate the inhibitory effect of flavonoids on		

HMG-CoA reductase. The methods for analysis of specific inhibitors of mevalonate biosynthesis have been well-established, using Vero cells, a cell line obtained from kidneys of African green monkeys. Flavonoids isolated from different traditional Chinese herbs were dissolved in DMSO and incubated with Vero cells with or without the addition of 1 mM mevalonate or 5 mM sodium acetate in order to observe cell growth for 24 h. Concentrations of 1 mM mevalonate or 5 mM sodium acetate were added into culture medium in order to observe the effect on cell growth. Different concentrations of pravastatin to inhibit cell growth were used as a positive control. About 40 flavonoid compounds were used for study, only one compound, astilbin (belonging to the flavonol group), showed significant inhibition of Vero cell growth. This study shows that one flavonoid compound, isolated from traditional medicinal herbs, may be an effective HMG-CoA reductase inhibitor which might be developed into a new hypocholesterolemic agent.