• 計畫中文名稱	開發小葉葡萄應用於預防神經退化疾病之功能研究		
• 計畫英文名稱	Study of the Preventive Effects of Vitis Thunbergii on the Neurodegenerative Diseases		
• 系統編號	PW9706-0097	• 研究性質	應用研究
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• 執行機構	台北醫學大學醫學檢驗暨生物技術學系(所)		
• 年度	97 年	• 研究經費	1200 千元
• 研究領域	農業推廣類		
• 研究人員	梁有志,林時宜		
• 中文關鍵字	--		
• 英文關鍵字	--		
• 中文摘要	小葉葡萄中富含槲皮素(quercetin)、白藜蘆醇(resveratrol)及其他多酚類化合物，這些多酚類化合物在很多研究中，被證實具有保護心血管疾病、抗癌、抗衰老及改善腦神經退化性疾病(neurodegenerative diseases)。以白藜蘆醇爲例，它具有高度抗氧化、抗發炎的活性，並且被視爲是一種植物雌激素(phytoestrogen)。這些活性均有助於其保護腦神經細胞。在抗氧化方面，它可直接捕捉活性氧分子(reactive oxygen species)或經由活化抗氧化酵素，來防止神經元細胞及神經膠質細胞(glial)受到活性氧分子的攻擊；在抗發炎方面，它可抑制經由 amyloid, LPS, cytokines 或 oxidized low-density lipoprotein 所引起的神經膠質細胞(如 microglia)的過度發炎反應。由於小葉葡萄中富含多酚類化合物，尤其是 resveratrol，我們認爲小葉葡萄的相關產品，極可能可以保護腦神經細胞並可預防腦神經退化的相關疾病。在 96 年度計畫中，我們初步證實小葉葡萄萃取物可以防止微小膠細胞發炎及防止 KA 引起的神經凋亡，動物試驗也已進行中。在 97 年度計劃中我們將使用 96 計畫中已萃取出來的四種單一純化物，分別是 resveratrol, ampelopsin C, (+)-viniferin 及(+)-vitisin A，及陸續萃取出來的新單一化合物(子計劃一提供)。運用 in vitro 及 in vivo 的實驗，探討其預防腦神經退化性疾病的可能性。◎預防神經退化功能評估，包括細胞試驗-抗 KA (kainic acid)神經毒性試驗及抗微小膠發炎試驗，初步尋找可能的有效純化物；再以動物試驗-抗 KA 引起鼠腦神經退化試驗，來驗證小葉葡萄純化物可以改善腦神經退化性疾病。		
• 英文摘要	Vitis thunbergii is rich in quercetin, resveratrol, and other polyphenols that are known to protect against cardiovascular diseases and		

	cancers, as well as to promote anti-aging effects in numerous organisms. It also modulates pathomechanisms of debilitating neurological disorders, such as strokes, ischemia, and Huntington's disease. Resveratrol has antioxidant and anti-inflammatory activities, and act as a phytoestrogen, all of the abilities contributes to protect against neurodegenerative diseases. In antioxidant, resveratrol can prevent neuron and glial cells from reactive oxygen species (ROS) attack by directly scavenge ROS or indirectly activate antioxidant enzymes. On the other hand, resveratrol can inhibit inflammation induced by ??-amyloid, LPS, cytokines or oxidized low-density lipoprotein in microglia. Because Vitis thunbergii is rich in polyphenols, especially resveratrol, it is very possible that the commercial products of Vitis thunbergii can prevent neurodegenerative-relative diseases. In our ongoing plan, we have found that Vitis thunbergii extracts exhibited anti-inflammatory activity in LPS-induced microglia and anti-cytotoxicity activity in kainic acid (KA)-treated primary neuron cells. At present, we are testing their effects on neuroprotective activity in mice brain. In this plan, we will use various kinds of pure chemicals from Vitis thunbergii, including resveratrol, ampelopsin C, (+)-??-viniferin and (+)-vitisin and other purified compounds to examine the protective function in neurodegenerative diseases in vivo and in vitro. Major experiments are list in below. ◎Neuroprotective tests--- In vitro tests: KA-induced neuron death assay and microglia inflammation assay. In vivo test: KA-induced brain neuron death assay.