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• 計畫英文名稱	The Development of the Bioactive Constituents from Taiwanese Plants on the Skin Whitening and Anti-Wrinkle Activities	
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• 中文關鍵字	--	
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• 中文摘要	<p>在黑色素生成步驟裡酪氨酸相關酵素共同參與其反應過程，包含酪氨酸酵素、酪氨酸相關酵素 1 和酪氨酸相關酵素 2。酪氨酸酵素是個含銅的單氧酶，在生成黑色素中進行羥基化與氧化反應此為合成黑色素的速率決定步驟。本實驗的活性化合物-白頭翁素(Anemonin)由厚葉鐵線蓮(<i>Clematis crassifolia</i> Benth)萃取而來，具有抑制黑色素細胞內酪氨酸酵素的能力其 IC50 為 43.5μM。在抑制黑色素生成方面，持續加藥 48 小時後黑色素生成可將低約 70%左右。Anemonin 在西方點墨法的結果酪氨酸酵素與相關酵素 2 的蛋白表現在 24 小時後都被明顯的抑制。以細胞免疫染色法加以觀測細胞內此 3 種酵素，酪氨酸酵素與酪氨酸相關酵素 2 在細胞體內的表現是降低的。最後利用即時定量聚合酵素連鎖反應觀察 3 種酵素的基因表現，白頭翁素確實能減少酪氨酸及其相關蛋白的基因表現。本實驗結果討論，anemonin 在影響黑色素的生成原因可能是經由抑制酪氨酸及其相關酵素的基因表現，因此能調控此 3 種酵素的蛋白表現，希望在未來可以實際運用在化妝品美白的用途上，做為新一代皮膚美白劑。</p>	
• 英文摘要	<p>Melanin synthesis is a highly cooperative process carried out by tyrosinase family proteins, including tyrosinase, tyrosinase-related protein 1 (TRP1) and tyrosinase-related protein 2 (TRP2). Tyrosinase catalysis reaction including hydroxylation and oxidation steps which are the rate-limiting steps in melanin production. In the present study, the active compound, anemonin was isolated from <i>Clematis crassifolia</i> Benth showed the less cellular toxicity and most efficacious in inhibition of tyrosinase activity. When treated with anemonin for 48 hours, the inhibition of tyrosinase activity was above 60%. Melanin synthesis was reduced to 70% when sustained administration for 48 hours. The cellular mechanism in melanocyte was further investigated. The protein expression of tyrosinase and TRP2 were significantly inhibited in 24 hr. Decreased of these protein expression were further</p>	

confirmed by immunocytochemistry. Anemonin suppressed the expression of tyrosinase and its related proteins as demonstrated by quantitative real-time PCR (qRT-PCR). In conclusion, anemonin may down-regulate gene encoding of tyrosinase and its related proteins (TRP2 and TRP2) and resulted in reducing melanin synthesis. The results suggested that anemonin can be used as whitening agent for therapeutic intervention of hyperpigmentation on cosmetics.