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• 計畫中文名稱	在 YC-1 誘導含有脂質的 RAW 264.7 巨噬細胞脂質分解時鈣離子所扮演的角色(I)
• 計畫英文名稱	Roles of Calcium in YC-1-Induced Lipolysis in Lipid-Laden RAW 264.7 Macrophages (I)
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• 中文關鍵字	巨噬細胞; 脂質分解; 鈣離子
• 英文關鍵字	Macrophages; Lipolysis; Calcium; YC-1
• 中文摘要	本研究在探討含有脂質的 RAW 264.7 巨噬細胞之脂質分解過程中鈣離子所扮演的角色。以 BAPTA/AM 這種可與鈣離子結合的藥物先處理巨噬細胞無法抑制 YC-1 所誘導的脂質分解，這可由 Nile red 染色和游離脂肪酸之釋放得知。以 EGTA 移除細胞外的鈣離子無法壓抑 YC-1 所引起的脂質分解，這顯示細胞外的鈣離子並不參與 YC-1 所誘導的脂質分解。然而，以 thapsigargin 這種可穿透細胞並釋出細胞內鈣離子的藥物處理細胞卻可得到和 YC-1 相同的脂質分解效果，這個結果假設細胞內的鈣離子濃度上升便足以刺激脂質分解。經由以上的結果，鈣離子濃度之波動在 YC-1 所誘導的脂質分解過程究竟扮演何種角色仍待進一步的釐清。
• 英文摘要	The roles of calcium in lipolysis in lipid-laden RAW 264.7 macrophages are investigated in this study. Pretreatment of lipid-laden macrophages with BAPTA/AM, a calcium-binding agent, failed to inhibit lipolysis induced by YC-1, as evidenced by Nile red staining and free fatty acid release. Chelating extracellular calcium by EGTA fails to prevent YC-1-induced lipolysis, indicating that extracellular calcium is not involved in lipolysis. In addition, lipolysis induced by YC-1 was not inhibited by blocking calcium release from intracellular store by TMB-8 or dantrolene. However, treating cells with thapsigargin, a cell-permeable intracellular Ca2+-releasing agent, mimics the lipolytic effect of YC-1, suggesting intracellular increase in [Ca2+] is sufficient in stimulating lipolysis. Taken together, further studies are required to clarify the exact roles of [Ca2+] fluctuation in YC-1-induced lipolysis.