• 系統編號	RN9604-3905
• 計畫中文名稱	體內評估皮膚及腫瘤 ALA 的堆積---利用鉺雅鉻雷射促進 ALA 經皮吸收
• 計畫英文名稱	In vivo Assessment of Protoporphyrin IX Accumulation in Skin and Tumors after Enhancement with Topical 5-Aminolevulinic Acid Application Using an Erbium--- YAG Laser
• 主管機關	行政院國家科學委員會
• 計畫編號	NSC94-2314-B038-058
• 執行機構	臺北醫學大學醫學研究所
• 本期期間	9408 ~ 9507
• 報告頁數	11 頁
• 使用語言	英文
• 研究人員	李婉若; 沈杏娟; 方嘉佑 Lee, Woan-Ruoh; Shen, Shing-Chuan; Fang, Jia-You
• 中文關鍵字	--
• 英文關鍵字	--
• 中文摘要	查無中文摘要
• 英文摘要	Microde rmabrasion is a widely performed skin re juve na tion procedure. It can partly ablate and homogenize the stratum corneum (SC) layers. The effe ct of microderma brasion tre atment on the skin pe rmea tion of hydrophilic and lipophilic drugs was examined in this study. 5-Fluoroura cil (5-FU) and clobe tasol 17-propionat e we re used as the hydrophilic and lipophilic permeants, respectively. In vitro skin delivery using porcine skin and in vivo topical application employing nude mouse as the animal model were both used to examine the effect of microdermabrasion. The vacuum pressures used in this study (15iV25cmHg) were much lower than those used for therapeutic purposes. The 5-FU permeation a cross microderma brasion-treate d skin was 8- to 2 4-fold higher than that across intact skin and depended on differences in treatment pressure and duration. An intensity of 15cmHg for 10 seconds showed the greatest enhancement of 5-FU delivery via the skin. In contrast to the results for 5-FU, microdermabrasion reduced the skin permeation and deposition of topically applied clobetasol. The partitioning effect of clobetasol from the vehicle to the SC may have predominated this result. Microdermabrasion also enhanced the skin delivery of the hydrophilic 5-aminolevulinic acid (ALA). Confocal laser scanning microscopy (CLSM) of microdermabrasion-treated skin revealed intense red fluorescence of ALA-transformed protoporphyrin (PpIX) within the epidermis and upper dermis. Microdermabra sion can improve the skin permeation of hy drophilic molecules.