• 系統編號	RN9604-3904		
• 計畫中文名稱	因尼菲迪平(Nifedipine)所引發之牙齦增生 Matrix metalloproteinases-1, 3, 8 及 TIMP-1 之分析		
• 計畫英文名稱	Analysis of matrix metalloproteinases-1,3,8 and TIMP-1 in nifedipine induced gingival overgrowth		
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• 中文關鍵字	--		
• 英文關鍵字	Gingival overgrowth; Nifedipine: MMP; TIMP; Immunohistochemistry; RT-PCR		
• 中文摘要	目的:本研究目的比較健康(H, n=2)者與因尼菲迪平(Nifedipine)引發牙齦增生患者之增生牙齦(NIGO, n=6),兩組病人之牙齦纖維母細胞以藥物尼菲迪平(Nifedipine)刺激後之分泌 MMP-1,3,8, 13 及 TIMP-1 表現情形。材料與方法: 經由牙周手術方式取得兩組病人的牙齦組織後以免疫染色方式作定性分析，並培養細胞至第三代至第八代以供實驗使用，分別於健康(H)者與因尼菲迪平(NIGO)引發牙齦增生患者之牙齦纖維母細胞培養基內，加入五種濃度之 nifedipine(0ng/ml、50ng/ml、100ng/ml and 1000ng/ml)刺激，經過 48 小時收取細胞及培養液。本實驗先行以免疫染色確認於 NIGO 與 health groups 之表現，再利用 RT-PCR，分析細胞內 MMP-1,3,8 及 TIMP-1 可能之表現情形。結果: 發現 NIGO 於組織免疫染色中，於 MMP-1 表現較爲強烈。MMP-13 亦有中度免疫染色之表現。因此我們依上述結果進行 MMP-1 基因之 real-time RT-PCR 量化。結論: 與我們前一個 NSC 計畫所成立之假說吻合，nifedipine 並非爲造成 NIGO 細胞特殊表現之重要因子，炎性細胞激素如 IL-1β 可能才是主因。		
• 英文摘要	Objective: The purpose of this study is to analyze the expression of MMPs and TIMPs in the overgrowth gingival tissue induced by nifedipine (NIGO). Materials and methods: Patients were divided into two group：healthy group (H, n=2); nifedipine induced gingival overgrowth group (NIGO, n=7). Gingival samples were collected during periodontal surgery. Immmunohistochemical staining technique of tissue samples and cell culture method for RT-PCR were used to analyze the expression of MMP-1, 3, 8, 13 and TIMP-1 in this study. Gingival fibroblast were incubated with DMEM and five concentrations of nifedipine (0ng/ml; 50ng/ml;		

100ng/ml and 1000ng/ml). Results: We found that MMP-1 was only discovered intensively in the gingival tissue of NIGO, as compared to that of H group. TIMP -1 was expressed slightly in the both groups. The intensities of MMP-3 and 8 were not significantly expressed in the NIGO tissue; however, MMP-13 was moderately evident in the infiltration layer of gingival of NIGO group. Base on the above results, the genetic expression of MMP-1 was quantified by using Real time PCR. Our results discovered that there was no statistic difference of the MMP-1 between NIGO and H group. Conclusion: It can be concluded that nifedipine is not the major stimulant for the prominent expression of MMP-1 and TIMP-1 in NIGO cells. This is commensurate with our previous assumption that inflammatory cytokines, e.g. IL-1beta， may be the possible trigger factors for NIGO.