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• 英文關鍵字	Porcine dermal collagen membrane；Immunogenicity；Collagen；Rat；Glutaraldehyde
• 中文摘要	本研究之目的在檢測台北醫學院自製的豬皮膠原蛋白膜(Porcine dermal collagen membrane;PDCM)是否具免疫生成性;以及戊二醛之作用是否會改變其免疫反應。30 隻雄性、重 350 克的白鼠,分爲五組,其中四組爲實驗組,一組爲對照組,每組 6 隻,將經三種不同濃度(3.00%、0.05%、0.01%)戊二醛修飾的 PDCM 以及未經戊二醛修飾的 PDCM 種入實驗組的下顎骨區;對照組之手術方式同實驗組,惟不植入 PDCM。於術後 3、6、9 週進行心臟穿刺採集血清,並以酵素結合免疫分析法(ELISA)檢測;結果顯示未經戊二醛修飾的 PDCM 之免疫生成性遠高於經戊二醛修飾之 PDCM,可見戊二醛可降低 PDCM 之免疫生成性。而未經戊二醛修飾的 PDCM(抗原)與經 0.01%、0.05%、3.00%三種不同濃度戊二醛修飾的 PDCM 刺激產生之抗體亦會產生交叉免疫反應,顯示經戊二醛修飾的 PDCM 產生之抗體仍能辨視未經戊二醛修飾的 PDCM 抗原,意即戊二醛雖能降低免疫生成性,卻不致使抗原決定部位產生明顯改變;由本實驗可知 PDCM 雖具免疫生成性,但可以適宜濃度戊二醛修飾降低之。
• 英文摘要	Previous studies showed that crosslinking of porcine dermal collagen membrane (PDCM) with glutaraldehyde (GA) could retard its resorption rate and still preserve its biocompatibility. The purpose of this study was to assay the relevant humoral immune response induced by PDCM and the possible effect of GA on PDCM's immunogenicity. Thirty Sprague-Dawley rats were selected and divided into five groups (n=6). PDCM reconstituted with 3 different concentrations (0.01%, 0.05%, 3%) of GA and the non-GA crosslinked (non-GAX) PDCM were implanted in the submandibular region of rats. The sham procedure was done on the control without grafting. Three, six, and nine weeks after implantation, sera were collected by cardiac puncture and assayed for anti-collagen

antibodies by ELISA. The architecture of PDCMs was also observed under SEM. The results revealed that anti-collagen antibodies induced by non-GAX PDCM were statistically significant higher than GAX PDCM. The sera in rats implanted with non-GAX PDCM cross-reacted with the GAX PDCM and vice versa. It indicated that the immunogenicity of non-GAX PDCM was stronger than GAX PDCMs, and that cross-reactivity existed between antibodies induced by GAX antigen and non-GAX antigen. Under SEM, there were four different types of superficial structures: fibrillar structures, open pores, channels, and sheet-like structures. The greater the concentration of GA, the surface architecture of PDCM looks denser. It is concluded that crosslinking of GA could change the superficial stereo architecture of PDCM and reduce its immunogenicity.