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• 中文關鍵字	豬皮; 膠原蛋白膜; 戊二醛; 細胞毒性; 比色試劑法
• 英文關鍵字	Pig skin; Collagen membrane; Glutaraldehyde; Cytotoxicity; MTT assay
• 中文摘要	膠原蛋白與人體組織成分相似，具有促進新的膠原蛋白形成且不會干擾傷口癒合的特性，所以近來被廣泛地應用於各種醫療用途;自九三年開始，臺北醫學院口研所自豬皮萃取製得膠原蛋白膜，並以戊二醛修飾，改變膠原蛋白膜之結構。目前關於此膠原蛋白膜性質的測試所獲結果，包括此膜具低的免疫生成性、導引骨質再生性、理想的彈性模數、可控制的分解速率、適宜的細胞通透性及可控制的膨脹率等，惟此膜之細胞毒性尚不明。本實驗採用纖維母細胞與材料直接接觸或與其浸泡液接觸方式進行毒性測試，細胞與材料經不同接觸時間(1,3,5,7 天)或與不同時間(1,3,5,7 天)的浸泡液接觸後，在電子顯微鏡下觀察細胞形態，同時進行活性測試;分別以 MTT 檢測、Neutral red 染色法測定之。實驗結果顯示纖維母細胞可均勻分佈於經戊二醛修飾之豬皮膠原蛋白膜表面，其外型呈紡錘狀，部分細胞垂直排列於纖維四周，顯示細胞活性正常;MTT 檢測及 Neutral red 檢測皆顯示細胞與經戊二醛修飾之豬皮膠原蛋白膜反應強度皆大於對照組(1,3,5,7 天;ANOVA test, $P<0.05$)。而不同濃度之戊二醛(0%, 0.01%, 0.05%, 3%)修飾該豬皮膠原蛋白膜對纖維母細胞之活性，並無顯著差異，可見本豬皮膠原蛋白膜製備過程中，以 PBS 充分清洗後，即不會因戊二醛殘留導致其具有細胞毒性，符合臨床醫療使用之基本要求。
• 英文摘要	Collagen from animal sources, which is chemically and structurally similar to human collagen, has been recently applied in medical field . Since 1993, the staff of The Graduate Institute of Oral Rehabilitation, Taipei Medical College, have successfully prepared porcine dermal collagen membrane (PDCM). Based on the previous studies, it was known that PDCM possess guided tissue regeneration effect, acceptable elastic modulus, controllable biodegradation rate and swelling ratio and low immunogenicity. All of

these properties are requisite for biomedical material used clinically. In the present study, we attempt to evaluate the possible cytotoxicity of PDCM on primary human gingival fibroblast. In this study, human gingival fibroblast are cultured together with test PDCMs in various different times (1,3,5,7 days) with medium change every 24 hours or with the extracts of PDCM (1-,3-,5-,7- day extracts) for 24 hours. The possible effects on fibroblasts are measured by morphological observation under SEM, and functional assays that include MTT test, neutral red permeability staining. Fibroblast culture with no PDCM served as the negative control. The results reveal that fibroblasts could scattered on the fibrils of PDCM with in spindle shape, and some arranged in perpendicular direction, it indicated that the viability of cell were normal. MTT and neutral red test reveal that the viability of fibroblasts cultured with PDCM were stronger than the controls (day 1,3,5,7; ANOVA test, $P<0.05$). These indicated that PDCM didn't express the character the cytotoxicity and would be suitable for clinical application.