• 系統編號	RN9408-0631
• 計畫中文名稱	吸收性聚酯共聚物/氫氧磷灰石複合材之引導組織再生薄膜研究(II)
• 計畫英文名稱	The Studies of Resorbable Copolyester/HA Cpmpositions as Bioactive Bone Substitutes and GTR Membranes (II)
• 主管機關	行政院國家科學委員會
• 計畫編號	NSC92-2314-B038-013
• 執行機構	臺北醫學大學口腔復健醫學研究所
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• 使用語言	中文
• 研究人員	李勝揚 Lee, Sheng-Yang
• 中文關鍵字	組織引導再生術; 酯交換反應; 吸收性薄膜; 氫氧磷灰石
• 英文關鍵字	GTR; transesterification; Resorbable membrane; Hydroxyapatite (HA)
• 中文摘要	以目前組織導引再生薄膜商品多以單一材質爲主，其有限之功能尚不足兼顧臨床上最佳化之需求，如何透過新薄膜材料之設計與研發，發展出吸收速率適中之新材料，適切地抑制上皮細胞之增生，而加速骨細胞與其他組織之成長，以減少病患在治療過程之 不適與縮短痊癒時間，相信是值得研究之方向，本兩年期之計畫，第一年重點在設計與備製新吸收性引導組織再生薄膜，本期工作重點爲建立新材料開發之關鍵技術，針對控制吸收性聚酯材料化學特性相關之固態聚合、熱熔酯交換、及水解等反應，進行研究，應用熔融酯交換之加工方式將軟性鏈結及硬性鏈結之聚酯材料製成具可吸收性之彈性體高分子，再將之與氫氧磷灰石混摻後製成薄膜，並將薄膜之單面塗佈可減少牙齦發炎水性之膠體，試製出能兼具柔軟性與加速骨細胞生長速率特性之薄膜原型 (prototype)，以進行生物相關特性測試。第二年則是以進行吸收性引導組織再生薄膜之生物相容性與動物試驗爲主，瞭解可吸收性薄膜在動物體內之分解速率，及後續發展之研究的方向。
• 英文摘要	The improvement in surgical technique and the barrier materials have made the GTR technology successfully applied in treating the periodontal diseases. Various resorbable barrier materials have been marketed during these few years offering the benefit of no need for second-stage surgery. Although these materials showed some promising results, it has to conclude that the ideal resorbable membrane still needs to be developed. Our goal is to develop a hybrid polymer GTR membrane system to meet specific human biology requirements and to reduce the period of healing time. We proposed a two-year project. The major task of the first year will be the design and preparation of resorbable GTR membranes. In the second year, in vitro and in vivo test will be employed to evaluate this multifunctional GTR membrane. So far, the melt transesterification, solid-state polymerization, and hydrolysis reaction were studied to establish the core technology. The addition of hydroxyapatite (HA) will enhance osteoconductive properties into resorbable polymer matrix. The prototyping

hybridized GTR membrane will be prepared by the end of first year to ensure the continuity of second year project.