• 系統編號	RN9408-0044
• 計畫中文名稱	以體外與體內實驗模式探討 2,6-雙異丙烷酚之抗發炎作用
• 計畫英文名稱	In Vitro and in Vivo Studies on the Anti-inflammatory Effects of 2,6-Diisopropyphenol
• 主管機關	行政院國家科學委員會 • 計畫編號 NSC91-2314-B038-027
• 執行機構	台北醫學大學醫學系
• 本期期間	9108 ~ 9207
• 報告頁數	9 頁 • 使用語言 英文
• 研究人員	陳瑞明;陳大樑; 陳瑞明 Chen, Ruei-Ming; Chen, Ta-Liang; Chen, Ruei-Ming
• 中文關鍵字	2,6-雙異丙烷酚; 抗發炎; 體外; 體內; 巨噬細胞; 吞噬作用
• 英文關鍵字	2,6-Diisopropylphenol; Antiinflammatory; In vitro; In vivo; Macrophage; Phagocytosis
• 中文摘要	查無中文摘要
• 英文摘要	Septicemia induced by gram-negative bacterial infection is a serious and life-threatening clinical syndrome occurred in intensive care unit patients. The prevalence of sepsis in hospitalized patients appears to significantly increase over the past decades, encountered by both surgeons and internists. Lipopolysaccharide, an endotoxin produced by gram-negative bacteria, is a main cause for endotoxic sepsis. Administration of rats with lipopolysaccharide can induce a sepsis-like syndrome. Immune cells in septic patients can be activated by lipopolysaccharide and increase the releases of pro-inflammatory cytokines and nitric oxide into blood and tissues. These pro-inflammatory cytokines and nitric oxide are important effectors to induce multiple-organs failure in septicemia. Decreasing the productions of inflammatory cytokines and nitric oxide induced by lipopolysaccharide will be an effective treatment for increasing the survival of septic patients. 2,6-Diisopropylphenol, a fat-soluble intravenous anesthetic agent, is widely used in surgical operations for induction and maintenance of anesthesia. Previous studies have shown that 2,6-diisopropylphenol can protect cells from HOCl, superoxide, hydrogen peroxide and hydroxyl radical induced insults. Our previous project (NSC89-2314-B-038-038) has shown that 2,6-diisopropylphenol can protect macrophages from nitric oxide-induced apoptosis. A manuscript from the results of this project has been accepted and will be published on the Canadian Journal of Anesthesia. Study from our another project (NSC90-2314-B-038-045) has further demonstrated that 2,6-diisopropylphenol inhibited lipopolysaccharide-induced inducible nitric oxide synthase mRNA and

decreased the levels of nitric oxide. During septicemia-induced inflammation, nitric oxide, hydrogen peroxide and cytokines play important roles in the multiple organ failure syndromes. Study about the effects of 2,6-diisopropylphenol on lipopolysaccharide-induced cytokines is rare. Based on our previous studies of 2,6-diisopropylphenol, this project is designed to evaluate the anti-inflammatory effects of the intravenous anesthetic agent on in vitro macrophages and in vivo septic animals. This project used macrophage-like Raw 264.7 cells as the experimental model to evaluate the effects of 2,6-diisopropylphenol on modulating proinflammatory cytokines (TNF-.alpha., IL-1.beta., and IL-6) in lipopolysaccharide-activated macrophages. This study is expected to know more about the interaction between drugs during the anesthesia of septic patients.