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• 計畫中文名稱	含 tocotrienol 米油調整糖尿病大鼠組織抗氧化、膽固醇代謝機制及胰島素抗性之研究
• 計畫英文名稱	Effects of Rice Oil with Tocotrienol on the Tissues Oxidative Damage and Regulation of Insulin Resistant and Cholesterol Metabolism in Diabetes Rats
• 主管機關	行政院國家科學委員會
• 計畫編號	NSC94-2320-B038-043
• 執行機構	臺北醫學大學保健營養學系
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• 研究人員	鄭心嫻 Cheng, Hsing-Hsien
• 中文關鍵字	米麩油; Streptozotocin-誘發糖尿病大白鼠; 氧化壓力
• 英文關鍵字	Rice bran oil, Streptozotocin-diabetes rat, Oxidative stress; Tocotrienol; 8-OHdG
• 中文摘要	8-OHdG (8-hydroxy-2'-deoxyguanosin)是 DNA 受傷害的敏感指標。誘導糖尿病大鼠之 STZ (streptozotocin)會使大鼠体內產生 ROS(reactive oxygen species)。正常大鼠及 STZ 誘發糖尿病大鼠分別以大豆油或米麩油 4 週後，取得大鼠肝臟、腎臟、胰臟、大腦及心臟。萃取 DNA 後分出粒線體 mitochondrial DNA (mtDNA) 及核 nuclear DNA(nDNA)，分析 8-OHdG 含量。比較糖尿病大鼠與正常大鼠，攝食米麩油含 tocotrienol 可保護兒減少氧化傷害。其 mtDNA 之 8-OHdG 量較攝食大豆油顯著降低。尤其在肝、腎 2 及胰臟降低最顯著。
• 英文摘要	The possibility of 8-hydroxy-2'-deoxyguanosine (8-OHdG) serving as a sensitive biomarker of oxidative DNA damage and oxidative stress was investigated. Reactive oxygen species (ROS) have been reported to be a cause of diabetes induced by chemicals such as streptozotocin (STZ) in experimental animals. In this study, we examined oxidative DNA damage in multiple tissues in rats with STZ-induced diabetes by measuring the levels of 8-OHdG in the liver, kidney, pancreas, brain, and heart. Levels of mtDNA of 8-OHdG were 10 times higher than those of nDNA in multiple tissues. Significant reductions in mtDNA 8-OHdG levels were seen in the liver, kidney, and pancreas of diabetic rats treated with rice bran oil compared with diabetic rats without intervention. Our study demonstrated that oxidative mtDNA damage may occur in multiple tissues of STZ-induced diabetics rats. Intervention with rice bran oil rich in tocotrienol treatment may reverse the increase in the frequency of 8-OHdG.