探討台灣鄉土蔬菜— 紅甘藷葉中多酚類之生體可利用率及對人體抗氧化狀態之影響

The bioavailability and effect of dietary polyphenol from Leafy Lpomoea batatas on human antioxidant status

中文摘要

本研究之目的擬探討台灣鄉土蔬菜中紅甘藷葉多酚類之生體可利用率，及攝食紅甘藷葉 14 天後，對人體抗氧化狀態之影響。本實驗選取 16 位健康成人作爲受試者。實驗分爲兩階段，第一階段中分別給予受試者 200 公克水煮或油炒之紅甘藷葉，並於食用前、後 1、2、4、8、12、24 小時採集血液、24 小時尿液、72 小時糞便，以分析紅甘藷葉之生體可利用率。第二階段中，受試者由台北醫學大學附設醫院營養室供應 2 週含低多酚類蔬菜之午餐及晚餐作爲對照飲食；之後 2 週之午餐及晚餐中再以 100 公克油炒之紅甘藷葉取代 1 份蔬菜作爲實驗飲食。實驗期間每週採集空腹血液及 24 小時尿液，進行體內抗氧化力，氧化壓力之評估。結果顯示，第一階段中，以油炒方式烹調之紅甘藷葉，其多酚類生體可利用率高於水煮。第二階段中，攝食紅甘藷葉 14 天後，受試者血漿中多酚類濃度有上升的趨勢，且尿液中多酚類濃度有顯著較高的情形。此外，受試者攝食紅甘藷葉 14 天後，血中總抗氧化力 (TAS) 顯著增加，但血中維生素 E 濃度顯著下降。而血漿中脂質過氧化物 (MDA+4-HNE) 之含量，以食用紅甘藷葉後降低較爲顯著，且 LDL lag time 有延長之情形。由本研究結果顯示，以油炒方式烹調紅甘藷葉之生體可利用率較高；且持續攝食紅甘藷葉，可以改善人體內抗氧化狀態，並降低體內氧化壓力。

英文摘要

The aim of this study was to evaluate the absorption and bioavailability in human after consuming leafy Lpomoea batatas with different cooking methods and to explore the effect of polyphenol on human antioxidant status after 14 days intake of leafy Lpomoea batatas. Sixteen healthy adults were enrolled in this study. At the first part, subjects were given 200 g boiled or fried leafy Lpomoea batatas. Blood samples were taken before, 1, 2, 4, 8, 12, 24 h after the ingestion. Twenty-four hour urine and 72 h of feces samples were taken to analyze the polyphenol content. At the second part, subjects ingested the low polyphenol diet for 14 days followed by consuming leafy Lpomoea batatas for 14 days. Blood and urine samples were taken before, 0, 7 and 14 days. The results indicated that it had higher bioavailability of polyphenol from leafy Lpomoea batatas using fried method. Also, it showed increase in blood polyphenol level and significant increase in urinary polyphenol concentration, plasma TAS and

β-carotene level and decrease MDA+4-HNE and 8-OHdG level, however there was no significant increase LDL lag time after consuming leafy Lpomoea batatas for 2 wk.