大蒜炸油對倉鼠脂質代謝、抗氧化及抗血栓特性之探討

The Study of Fried Garlic Oil on Lipid Metabolism, Antioxidative and Antithrombotic Properties in Hamsters

中文摘要

本研究用臺灣產使之軟骨黑葉大蒜製作成不同炸油之樣品，探討對於餵食添加 0.5% 膽固醇飼料誘發高血脂症倉鼠之脂質代謝與體內抗氧化狀況的影響。實驗動物爲 5 週齡之雄性倉鼠 32 隻，以 AIN-93M 爲基礎飼料，隨機分爲 4 組 : Control 組、LG 組、MG 組、HG 組。分別添加 3%、15%、30%之大蒜炸油進行餵食，爲期 8 週。於實驗第 0、4、8 週收集血液與糞便樣本並於犧牲後收集肝臟進行分析，結果顯示，大蒜以殺菁後油炸所得之樣品含功能性成份最高，於第 4、8 週分析結果發現大蒜炸油能顯著降低血漿和肝臟中總膽固醇與三酸甘油酯濃度。且於第 8 週分析結果發現添加大蒜炸油之 LG 組、MG 組、HG 組，血液黏度明皆顯著低於控制組，同時顯著促進糞便中膽酸和中性固醇的排出。在抗氧化作用方面，有助於血液麩胱甘肽過氧化酶濃度的提升，且對肝臟過氧化物有顯著下降的效果。由以上結果得知，大蒜炸油對倉鼠有促進脂質代謝和抗血栓的效果，同時可改善倉鼠的抗氧化能力。

英文摘要

Fried garlic oil samples were prepared from native Taiwanese garlic and analysed by high performance liquid chromatography (HPLC). The content of organosulfur compounds was the highest in the fried-blanched-garlic oil sample. The sample was studied for its effects on lipid metabolism and antioxidant properties in hamsters with diet-induced hyperlipidaemia. Hamsters (32) were randomly divided into control (AIN-93M diet), low-fried-garlic oil diet (LG), medium-fried-garlic oil diet (MG) and high-fried-garlic oil diet (HG). After eight weeks, blood, liver and fecal samples were evaluated. Results revealed that the plasma and hepatic samples of the LG, MG and HG group members had lower levels of total cholesterol, triglyceride and viscosity than those of the control group. The excretion of fecal bile acids and neural sterols was significantly higher than the baseline levels in all the garlic-oil-treated groups. The garlic-oil-treated groups had significantly higher blood glutathione peroxidase activity and lower number of liver lipid peroxides than the control group. In conclusion, the consumption of fried garlic oil promoted lipid metabolism and exerted antithrombotic antioxidative effects in hamsters.