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• 中文摘要

大腸癌是和膳食關係最密切的癌症，許多膳食因子可調節大腸癌的形成，透過膳食預防大腸癌爲合理可行的方向。化學預防（Chemoprevention）是指利用天然物或藥物預防、逆轉或延遲癌症的發展，食品或其成分爲相當熱門的化學預防劑（Chemopreventive agent），據統計目前已有百種以上的食品或其成分具有預防大腸癌的潛力，是研發保健食品的良好原料。自從我國健康食品管理法實施以來，衛生署陸續公布多種健康食品的保健功能評估方法，但迄今只有癌症相關保健功能的草案。本研究之目的爲建立快速誘發型大腸癌之動物模式，作爲保健食品預防大腸癌功能的評估方法，並探討此評估方法的可行性及應用性。以動物實驗比較兩種高脂飼料（20%玉米油及 20%混合油）對 1,2-dimethylhydrazine（DMH）所誘發大腸癌形成過程的影響，分析時間點爲誘發 8 週、16 週及 25 週，分析項目包括大腸癌前期病變 Aberrant crypt foci (ACF)及大腸腫瘤。研究結果發現高脂飼料可增加大型 ACF 數、腫瘤發生率（Incidence）及多發性（Multiplicity），顯示具有促進大腸癌形成之作用，其中 20%混合油之效果優於 20%玉米油。本研究成果可提供大腸癌研究者更有效率的誘發型大腸癌動物模式，瞭解高脂飲食對大腸癌形成過程的影響，並可作爲衛生署制定保健食品預防大腸癌功能評估方法的參考。

• 英文摘要

Colorectal cancer is the form of cancer most closely associated with diet. Dietary factors play a role in colorectal carcinogenesis, and thus it may be possible to prevent the occurrence of this cancer by dietary modification. Chemoprevention refers to the use of natural or synthetic compounds to prevent, reverse, or delay the development of cancer. Food-derived products are highly interesting for developed as chemopreventive agents, and more than 100 dietary agents have been tested against colorectal cancer. The Department

of Health has promulgated several assessment methods of health food on health care effects. However, only a draft assessed the preventive effect of health food on cancer. This study was designed to establish a fast assessment method of health food on prevention of colorectal cancer, and to evaluate the application of this method. The experiment was designed to compare two high-fat diets (20% corn oil and 20% mixed lipids) on 1,2-dimethylhydrazine (DMH)-induced colorectal carcinogenesis in rats. Colons were examined for preneoplastic aberrant crypt foci (ACF) and tumors after 8, 16, and 25 weeks of induction. The results showed that high-fat diets increased the number of large ACF and the incidence and multiplicity of colon tumors. The tumor-promoting effect of 20% mixed lipids was better than that of 20% corn oil. This study will contribute to provide an efficient animal model of chemically induced colorectal cancer, to elucidate the role of high-fat diets in colorectal carcinogenesis, and to establish a referent assessment method of health food on prevention of colorectal cancer.