

Nutr Res 22 (7), 867-877 (2002)

Dietary curdlan suppresses dimethylhydrazine-induced aberrant crypt foci formation in Sprague-Dawley rats

Jun Shimizu (清水 純), Keita Kudoh, Masahiro Wada (和田政裕), Toshichika Takita, Satoshi Innami, Akio Maekawa, Tadahiro Tadokoro

Faculty of Applied Bioscience, Tokyo University of Agriculture, Setagaya-ku, Tokyo 156-8502, Japan

Faculty of Pharmaceutical Sciences, Josai University, Keyakidai 1-1, Sakado, Saitama 350-0295, Japan

The effect of curdlan (CD), a β -1,3-glucan produced by *Alcaligenes faecalis* var. *myxogenes*, on 1,2-dimethylhydrazine (DMH) induced aberrant crypt foci (ACF) formation in colon was studied in male Sprague-Dawley rats. All rats were received subcutaneous injection of DMH (12mg/kg body weight) once a week for two weeks. At one week after last DMH injection, rats were fed experimental diets containing an each 5% of cellulose powder (CP), CD and gellan gum for 32 days. The total number of ACF formed in colon and cecal beta-glucuronidase activity in the CD-fed group were significantly reduced to 53% and 57% as compared with those in the CP-fed group, respectively. The concentration of butyrate and beta-glucosidase activity were significantly increased in cecal contents of the CD-fed group. The present study demonstrated that the administration of CD suppresses DMH-induced ACF formation in rats.