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

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The effect of curdlan (CD), a \(\beta\)-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.