

[P3-2]**Effects of chicory inulin and oligosaccharides on fecal bile acids in streptozotocin-induced diabetic mice**

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Cholic acid and chenodeoxycholic acid are primary bile acids and conjugated with the amino acids glycine and taurine and cleaved by hydrolases in the colon. The resulting free bile acids are transformed into the secondary bile acids, deoxycholic acid and lithocholic acid by bacterial 7 α -dehydroxylation. It is assumed that secondary bile acids promote the development of large bowel cancer. Previously we have found that oligosaccharides affected profiles of fecal bile acids in rats fed a high cholesterol diet. In this study effects of chicory inulin and oligosaccharides on fecal bile acids were investigated in streptozotocin-induced diabetic mice.

Sixty ICR male mice were divided into one normal group and four diabetic groups. Diabetes was induced by injecting streptozotocin (40 mg/kg BW, consecutive intramuscular injections for 5 days) after 2 weeks of experimental diets feeding. Experimental diets were AIN⁹³-based control diet(Normal, DC), 6% fructooligosaccharide diet(DFO), 6% chicory inulin oligosaccharide diet(DCIO), 6% chicory inulin(DCI), and given for 25 days after streptozotocin injection.

Daily fecal volume increased more than two fold in diabetic groups compared with that of the normal group due to the increased moisture content. Fecal lithocholic acid concentration was significantly lower in diabetic groups compared with that of the normal group and there was no difference among diabetic groups. Deoxycholic acid concentrations tended to be lower in DCIO and DCI groups, but the difference was insignificant. Oligosaccharides and inulin, by nature to its resistance to digestion, serve to increase fecal bulk and thereby dilute bile acids in the lower intestinal tract. In this study effects of oligosaccharides and inulin on fecal bile acid in diabetic mice seemed to be masked by increased volume of feces in all diabetic animals.