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Prophylactic effects of *Bifidobacterium bifidum* (strains of human origin), probiotic feeding on *Escherichia coli* O157:H7 infection, in rats (*in vivo* antagonism)

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The *B. bifidum* strain (Bf1) was isolated on MRS medium contended 0.5 g/L of cysteine hydrochloride, 2 mg/L of nalidixic acid and 0.1 mg of mupirocin. This strain was isolated from (breastfed infant faeces). The effectiveness of *Bifidobacterium bidum* Bf 1 as a probiotic against enterohemorrhagic *Escherichia coli* O157:H7 infection was studied using rats model. Rats were fed with the probiotic for 7 days before or after single challenge with *E. coli* O157:H7. Fecal *B. bifidum* Bf1 and *E. coli* O157:H7 counts obtained by selective culturing methods were assessed for 1 week before and after infection while feed intake, body weight and composition were monitored during 1 week after infection. Histology of gut tissue (intestine) was analyzed until 1 and 2 weeks post infection, respectively. The pathogenicity of *E. coli* O157:H7, marked by body weight loss and intestinal histopathological changes in the infected group, was significantly reduced in the *B. bifidum*-treated group. Feeding *B. bifidum* Bf1 for 7 days before infection resulted in greater post-challenge feed intake and weight gain and lower fecal levels of *E. coli* O157:H7. A lesser degree of protection against *E. coli* O157:H7 infection was observed when *Bifidobacteria* were given during the 7 days after *E. coli* O157:H7 infection. These results demonstrate that feeding the probiotic *B. bifidum* Bf1 to rat can reduce the severity of *E. coli* O157:H7 infection, and suggest that this strain represents a good candidate for the prevention of enteric infections in human.

Biography

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