

Safety evaluation of *Bifidobacterium pseudocatenulatum* G4 as assessed in BALB/c mice

ABSTRACT

Aims: To assess the safety of *Bifidobacterium pseudocatenulatum* G4 in BALB/c mice that involves examination of bacterial translocation, changes in the internal organs and histology of the intestinal lining. **Methods and Results:** Forty male BALB/c mice were randomly assigned into five groups (n = 8). Three groups were orally fed with 50 μ l of three different concentrations of *B. pseudocatenulatum* G4 (2×10^4 , 1×10^8 and 1×10^{11} CFU day⁻¹) for 4 weeks. One group was orally administered with 50 μ l of 1×10^8 CFU *B. longum* BB536 per day for 4 weeks and last group was used as a nonbifidobacterial treatment control, which received 50 μ l of skim milk. The administered strains did not affect the general health of mice and incapable of carrying out translocation to blood or liver. There were no significant differences in the internal organ (liver, heart, kidney and spleen) indices, serum enzymes of liver (aspartate aminotransferase, alkaline phosphate, alanine aminotransferase) and kidney (urea and creatinine) and histology (villi height, crypts height, mucosa thickness and epithelial cell height) of caecum, ileum and colon. **Conclusion:** Administration of high dose of up to 1×10^{11} CFU *B. pseudocatenulatum* G4 per day to mice did not show any health threatening symptoms. **Significance and Impact of the Study:** *Bifidobacterium pseudocatenulatum* G4 is none pathogenic to BALB/c mice and could be safe probiotic for human consumption.

Keyword: Bifidobacterium, Infectivity, Marker enzymes, Organs, Safety, Translocation