

Tannock, G.W., Munro, K., Harmsen, H.J.M., Welling, G.W., Smart, J., & Gopal P.K., (2000). Analysis of the fecal microflora of human subjects consuming a probiotic product containing *Lactobacillus rhamnosus* DR20. Applied and Environmental Microbiology, 66 (6), 2578-2588.

Abstract

The composition of the fecal microflora of 10 healthy subjects was monitored before (6-month control period), during (6-month test period), and after (3-month posttest period) the administration of a milk product containing *Lactobacillus rhamnosus* DR20 (daily dose, 1.6×10^9 lactobacilli). Monthly fecal samples were examined by a variety of methods, including bacteriological culture analysis, fluorescent in situ hybridization with group-specific DNA probes, denaturing gradient gel electrophoresis of the V2-V3 region of 16S rRNA genes amplified by PCR, gas-liquid chromatography, and bacterial enzyme activity analysis. The composition of the *Lactobacillus* population of each subject was analyzed by pulsed-field gel electrophoresis of bacterial DNA digests in order to differentiate between DR20 and other strains present in the samples. Representative isolates of lactobacilli were identified to the species level by sequencing the V2-V3 region of their 16S rRNA genes and comparing the sequences obtained (BLAST search) to sequences in the GenBank database. DR20 was detected in the feces of all of the subjects during the test period, but at different frequencies. The presence of DR20 among the numerically predominant strains was related to the presence or absence of a stable indigenous population of lactobacilli during the control period. Strain DR20 did not persist at levels of $>10^2$ cells per g in the feces of most of the subjects after consumption of the product ceased; the only exception was one subject in which this strain was detected for 2 months during the posttest period. We concluded that consumption of the DR20-containing milk product transiently altered the *Lactobacillus* and enterococcal contents of the feces of the majority of consumers without markedly affecting biochemical or other bacteriological factors.