

Sui, J., Leighton, S., Busta, F., and Brady, L., (2002). 16S ribosomal DNA analysis of the faecal lactobacilli composition of human subjects consuming a probiotic strain *Lactobacillus acidophilus* NCFM[®]. Journal of Applied Microbiology, 93, 907-912.

Abstract

Aims: The aims of this study were to evaluate the ability of exogenous *Lactobacillus acidophilus* strain NCFM[®] to survive through the human gastrointestinal (GI) tract, and to evaluate the selectivity of Rogosa SL medium for faecal lactobacilli.

Methods and Results: The composition of the faecal lactobacilli of 10 healthy subjects was monitored for two weeks prior to, two weeks during and two weeks after the administration of the *Lact. acidophilus* strain NCFM[®] consumed with skim milk (daily dose 10^{10} viable cells). Fresh faecal samples were collected, processed and cultured on Rogosa SL selective medium for lactobacilli enumeration. Colonies demonstrating various morphologies were identified and purified for 16S ribosomal DNA sequence analysis for speciation of colonial genotype. The species composition of cultivable faecal lactobacilli changed considerably during consumption of the strain NCFM[®].

Conclusions: The probiotic *Lact. acidophilus* strain NCFM[®] can survive through the human GI tract, but cannot colonize itself during the two-week consumption. Rogosa SL medium is selective for faecal lactobacilli. However, genetic analysis is required for colony speciation.

Significance and Impact of the Study: It is demonstrated that continuous consumption is necessary to maintain a high population of the probiotic strain, and that the Rogosa SL medium is reliable.