Manufacturing process influences properties of probiotic bacteria

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Production and manufacturing methods and the food earlier may Influence the properties of probiotic strains, and have an impact on the outcome of clinical intervention studies. The aim of the present study was to establish whether the properties of a specific probiotic strain, *Lactobacillus rhamnosus* GG, may differ depending on the product and source of the strain. In total, fifteen different *L. rhamnosus* isolates, among them fourteen labelled as *L. rhamnosus* GG, were isolated from specific probiotic products. The micro-organisms were phenotypically and genotypically characterised. Their adhesion properties were compared using the human intestinal mucus model, and the ability of the isolates to influence model pathogen adhesion to human colonic mucus was assessed.

All *L. rhamnosus* isolates used were confirmed as members of the species *L. rhamnosus*. Except one reference strain, all *L. rhamnosus* isolates showed genotypic profiles identical to that of *L. rhamnosus* GG (ATCC 53103). All *L. rhamnosus* isolates showed similar tolerance to acid and carbohydrate profiles and were able to bind to human colonic mucus. However, pathogen exclusion by inhibition and competition varied significantly among the different *L. rhamnosus* isolates and pathogens tested. The results suggest that different sources of the same probiotic may have significantly altered strain properties. This should be considered in *in vivo* studies on human subjects and also for quality control of probiotic products.