

Paineau, D., Carcano, D., Leyer, G., Darquy, S., Alyanakian, M., Simoneau, G., Bergmann, J., Brassart, D., Bornet, F., & Ouwehand, A., (2008). Effects of seven potential probiotic strains on specific immune responses in healthy adults: a double-blind, randomized, controlled trial. FEMS Immunology and Medical Microbiology, 53 (1), 107-13.

Abstract

This pilot study investigated the immunomodulatory properties of seven probiotic strains. Eighty-three healthy volunteers aged 18–62 years consumed 2×10^{10} CFU of bacteria or a placebo (maltodextrin) over 3 weeks (D0–D21). Subjects received an oral cholera vaccine at D7 and at D14; blood and saliva samples were collected at D0, D21 and D28. Serum samples were analyzed for specific IgA, IgG and IgM, and saliva samples were analyzed for specific IgA only, by ELISA. Statistical analyses were based on Wilcoxon's signed-rank test (intragroup analyses) and exact median *t*-test (intergroup analyses). Salivary analysis showed no difference in specific IgA concentrations between groups. Serum analysis indicated an effect of some of the tested strains on specific humoral responses. Between D0 and D21, IgG increased in two probiotic groups, for example, *Bifidobacterium lactis* BI-04 and *Lactobacillus acidophilus* La-14, compared with controls ($P = 0.01$). Trends toward significant changes in immunoglobulin serum concentrations compared with controls ($P < 0.1$) were found for six out of the seven probiotic strains. In conclusion, some strains of probiotics demonstrated a faster immune response measured with serum immunoglobulin indicators, especially IgG, although overall vaccination was not influenced. Specific strains of probiotics may thus act as adjuvants to the humoral immune response following oral vaccination.