

Effect of adherent *Lactobacillus* spp. on in vitro adherence of salmonellae to the intestinal epithelial cells of chicken

ABSTRACT

Single strains of *Lactobacillus acidophilus* and *Lact. fermentum*, isolated from chicken intestine, were used to study in vitro interactions with *Salmonella enteritidis*, *Salm. pullorum* or *Salm. typhimurium* in an ileal epithelial cell (IEC) radioactive assay. Exclusion, competition and displacement phenomena were investigated by respectively incubating (a) lactobacilli and IEC together, prior to addition of salmonellae, (b) lactobacilli, IEC and salmonellae together, and (c) salmonellae and IEC, followed by the lactobacilli. Lactobacilli were selected for study because of their strong ability to adhere to IEC and poor aggregation with salmonellae. The results demonstrated that *Lact. acidophilus* significantly reduced ($P < 0.05$) the attachment of *Salm. pullorum* to IEC in the tests for exclusion and competition, but not in the displacement tests. *Lactobacillus fermentum* was found to have some ability to reduce the attachment of *Salm. typhimurium* to IEC under the conditions of exclusion ($P < 0.08$), competition ($P < 0.09$), but not displacement. However, both *Lact. acidophilus* and *Lact. fermentum* were unable to reduce the adherence of *Salm. enteritidis* to IEC under any of the conditions.

Keyword: *Lactobacillus* spp.; In vitro interactions; Salmonellae; Chicken