

ABSTRACT BOOK



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PT262 Immunobiotic *Lactobacillus jensenii* TL2937 alleviates dextran sodium sulfate-induced colitis in mice

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Background: immunobiotics have emerged as promising interventions to alleviate inflammatory damage in inflammatory bowel disease (IBD). However, the beneficial properties of immunobiotics are strain dependent and therefore, each strain has to be evaluated in order to demonstrate its potential application in IBD. *Lactobacillus jensenii* TL2937 attenuates gut acute inflammatory response triggered by Toll-like receptor 4 activation. However, its effect on colitis has not been evaluated before.

Objectives: the aim of this work was to study whether the TL2937 strain was able to protect against the development of colitis in a dextran sodium sulfate (DSS)-induced mouse model.

Methods: *L. jensenii* TL2937 was administered to five-week-old female BALB/c mice before (4 days) the induction of colitis, at a dose of 10⁸ cells/mouse/day. Untreated mice were used as controls. Colitis was established by the administration of 2.5% (w/v) DSS in drinking water for 7 days. Mice were examined daily during 18 days for body weight, general appearance, stool consistency, and the presence of fecal blood. In addition, myeloperoxidase activity and cytokine production were evaluated in colon tissue samples.

Results: Mice fed with *L. jensenii* TL2937 had lower disease activity index and alterations of colon length when compared to control mice. In addition, reduced myeloperoxidase activity, lower production of pro-inflammatory (TNF, IL-1, IL-8, MCP-1, IL-15 and IL-17) and higher levels of immunoregulatory (IL-10 and IL-27) cytokines were found in TL2937-treated mice. These findings indicate that *L. jensenii* TL2937 is able to alleviate DSS-induced colitis and suggest a novel application for this probiotic strain.