

ABSTRACT

THESIS: The Regulatory Effects of *Bifidobacterium infantis* on the Secretomotor Activity of the Enteric Nervous System after Oral Feeding in Animal Model of TNBS Colitis

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DEGREE: Master of Science

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DATE: July, 2011

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Bifidobacterium infantis (BI) and other probiotics are non-pathogenic living organisms that have recently gained attention for their possible therapeutic implications on the health of the digestive tract. The mechanisms by which probiotics exert their effects are largely unknown. This study explored the protective and regulatory effect of oral BI on the enteric nervous system (ENS) in the TNBS-induced colitis rats. Electrical field stimulation and chemical stimulation by serotonin (5-HT) were used to elicit changes in the short-circuit current (Isc) response of the colonic rat tissue. BI-fed colitis rats expressed trends of higher secretomotor activity and revealed signs of decreased macroscopic inflammatory damage when compared to sham-fed colitis rats, suggesting a protective and preventative role of oral BI. These findings may provide additional insights for understanding the prophylactic and therapeutic value of specific probiotics in intestinal inflammatory disorders, offering the possibility of a noninvasive alternative to toxic and immune-compromising drugs.