

## 4<sup>th</sup> International Conference and Exhibition on **Probiotics, Functional and Baby Foods** November 03-05, 2015 Valencia, Spain

## Invitro antagonistic effects of Listeria adhesion protein (LAP)-expressing Lactobacillus casei against Listeria monocytogenes and Salmonella Typhimurium Copenhagen

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Recombinant *Lactobacillus casei* expressing LAP reduces *L. monocytogenes* adhesion to, invasion into and translocation across in simulated intestinal fluids (SIF) under anaerobic conditions. This study investigated the effect of LAP-expressing *L. casei* on *L. monocytogenes* and S. Typhimurium in SIF under anaerobic conditions. Mammalian cells were grown to confluence, pre-treated with probiotics before exposure to pathogens suspended in SIF followed by incubation under anaerobic conditions. Adhesion and invasion of pathogens were analyzed *in vitro* using Caco-2 and HCT-8 cell models and their translocation was determined using trans-well model pre-seeded with Caco-2 cells. Recombinant *Lb. casei* inhibited adhesion of *L. monocytogenes* to invasion into and translocation across intestinal cells under the test conditions and reduced its cytotoxicity onto the epithelial cells. Tight junction integrity analysis using dextran fluorescein isothiocyane (DextranFITC) indicated that lower percentage of DextranFITC was recovered from basolateral chamber for Caco-2 cells pre-treated lower TEER reduction for cells pre-treated with recombinant *Lb. casei* protected the Caco-2 cells from damaging effects of *L. monocytogenes*. However, all the infection steps and intestinal cells' structural parameters were not affected for S. Typhimurium in the presence of recombinant *Lb. casei*. Thus, recombinant *Lb. casei* shows potential specificity against *L. monocytogenes* without enhanced cross protection against other enteric pathogens, specifically S. Typhimuriumvar Copenhagen.

## Biography

Mapitsi S Thantsha has completed her PhD from University of Pretoria, South Africa. She is a Senior Lecturer in the Department of Department of Microbiology and Plant Pathology, University of Pretoria. She is an alumnus of the Fulbright Scholarship Program, having spent time as a Visiting Scholar in the Department of Food Science, Purdue University, USA. She has published 14 papers in reputed journals, 2 book chapters and has presented at national and international conferences. She has been involved in human capacity development in terms of both undergraduate and postgraduate students' training.

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