OMICS Group Conferences
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International Conference and Exhibition on
Probiotics

November 19-21, 2012 Hilton San Antonio Airport, USA

Cholesterol removal by *Enterococcus faecium* CRL183 and *Lactobacillus helveticus* 416 in the presence of probiotic

Cavallini D.C.U., Robi G.C., Celiberto L.S., Roselino M.N., Pauly-Silveira N.D., Font De Valdez G., Rossi E.A. and Pinto R.A.
Sao Paulo State University, Brazil

The association of probiotics and prebiotics (synbiotic) has been related to an improvement of the resistance, cellular viability and cholesterol removal ability. However, this effect depends on the probiotic strain and prebiotic source used. The aim of this study was to verify the effect of different concentrations of inulin on the cholesterol removal by *Enterococcus faecium* CRL 183 and *Lactobacillus helveticus* 416. The strains were compared in terms of their cholesterol removal capability in culture medium containing 0% (control), 1%, 2%, 3%, 4%, 5% and 6% inulin GR. The medium was inocullated with probiotic bacteria (1%), and incubated anaerobically at 37°C for 24 h. The cholesterol level was determined by o-phthalaldehyde colorimetric method. In the absence of inulin, the strain of *Enterococcus faecium* CRL 183 was able to reduce the cholesterol added to culture medium in 58,56%. The prebiotic addition increased the cholesterol reduction *in vitro* ($p<0.05$), and the best results were obtained with inulin 5%. The cholesterol reduction by *Lactobacillus helveticus* 416 ranged from 12.30% to 17.23% and the supplementation with inulin did not significantly affect the results. In conclusion, this study indicate that association of inulin and *Enterococcus faecium* CRL 183 enhance the cholesterol removal *in vitro* and could be used to develop a symbiotic product with cholesterol-lowering properties.

Biography

Daniela C. Umbelino Cavallini obtained her BSc in Pharmacy and Biochemistry at Sao Paulo State University (Brazil) and PhD in Food and Nutrition at University of Campinas (Brazil). She is currently Assistant Professor Doctor at Sao Paulo State University, co-supervisor of Unit of Production and Development of Soy Products, conducing researches in probiotics, prebiotics and synbiotics products and their effects on intestinal microbiota and lipid profile. Professor Cavallini has authored, or co-authored 21 peer-reviewed publications, 2 book chapters and 42 published conference abstracts.

cavallinidc@fcfar.unesp.br