

Perception of Safety Climate in Brazilian Private Health Institutions

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Biography

Graduated in Nursing and Obstetrics from the State University of Londrina / Specialization in Occupational Health at São Camilo College / Specialization in Health Management at Getúlio Vargas Faculty /Acting as Corporate Quality Manager at NotreDame Intermédica /Acted for 14 years at IQG HEALTH SERVICES ACCREDITATION as a leading evaluator of Health Services Accreditation programs /Professional Experience in Evaluation and Consultant in methodology of health services ONA and ACI-Qmentum - HSO/Specialist in team development / Experience in implementation of Planning and development of organizational strategies Implementation of Patient Quality and Safety Policy.



Abstract

Statement of the Problem: The issue of antimicrobial resistance is a global threat to human, animal and environmental health. Pre, pro and synbiotics are emerging as an important alternative of antibiotics. Synbiotics are more efficient because of the combined effect of prebiotics and probiotics. The objective of this study was to evaluate the antimicrobial potentiality of D-tagatose and Lactobacilli as a synbiotic. **Methodology & Theoretical Orientation:** Batch culture fermentation was carried out with four Lactobacillus spp. (*L. rhamnosus* GG, *L. casei*, *L. acidophilus* and *L. fermentum*) and two pathogenic bacteria (*E. coli* and *S. typhimurium*) in presence of D-tagatose, Fructooligosaccharides and D-glucose as carbon sources. Based on D-tagatose utilization ability, two lactobacilli (*L. rhamnosus* GG and *L. casei*) were used in liquid co-culture assay to investigate the anti-microbial efficacy against selected pathogens. The agar diffusion bioassay was used to screen the anti-microbial activity of the cell free culture supernatant (CFCS) of the Lactobacillus spp. in grown presence of D-tagatose. **Findings:** Our results showed that all the selected Lactobacilli spp. were able to utilize D-tagatose, but the tested pathogens were failed to utilize it as carbon source. The highest growth was demonstrated by *L. rhamnosus* GG and *L. casei* after 24h. In co-culture assay, the presence of D-tagatose with selected lactobacilli was shown to inhibit both the pathogens (*E. coli* and *S. typhimurium*) completely (Fig.1 and Fig. 2). The anti-microbial activity by the CFCS was attributed by lowering of pH due to the production of lactic acid and short chain fatty acids. **Conclusion & Significance:** D-tagatose in combination with *L. rhamnosus* GG or *L. casei* can be used to develop a potential synbiotic supplement. The antimicrobial efficacy of the symbiotic preparation could be used in replacing the antimicrobial therapy in prevention or treatment of bacterial infections.

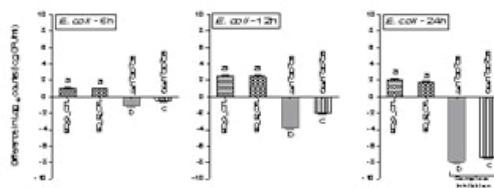


Figure 1: log differences in CFU counts (Mean \pm SEM) of *E. coli* at different time intervals (6, 12 and 24 h) against the initial microbial populations (~107 cells/ml). LR: Lactobacillus rhamnosus GG (NCDC 347); EC: Escherichia coli (ATCC 10536); CTL: Control Mono-culture; CC: Co-culture; G: D-glucose; T: D-tagatose; B: basal medium without carbon

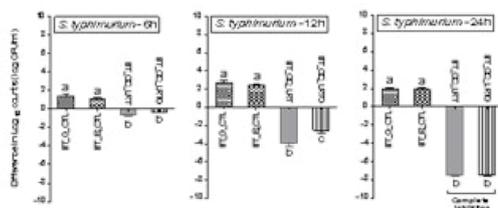


Figure 2: log differences in CFU counts (Mean \pm SEM) of *S. typhimurium* at different time intervals (6, 12 and 24 h) against the initial microbial populations (~107 cells/ml). LR: Lactobacillus rhamnosus GG (NCDC 347); ST: Salmonella typhimurium (ATCC 14028); CTL: Control Mono-culture; CC: Co-culture; G: D-glucose; T: D-tagatose; B: basal medium without carbon

Publication

Colla, J. B., Bracken, A. C., Kinney, L. M., Weeks, W. B. . "Measuring patient safety climate: a review of surveys" *Qual Saf Health Care* (2005) 14:364–366

Singer, S., Meterko, M., Baker, L., Gaba, D., Falwell, A., & Rosen, A.. "Patient Safety Climate in Healthcare Organizations (PSCHO). Measurement Instrument Database for the Social Science." (2012) Retrieved from www.midss.ie

Singer, S., Meterko, M., Baker, L., Gaba, D., Falwell, A., & Rosen, A.. "Workforce Perceptions of Hospital Safety Culture: Development and Validation of the Patient Safety Climate in Healthcare Organizations Survey" *HSR: Health Services Research* (October 2007) 42:5