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## Characterization of beneficial and technological properties of *Enterococcus faecium* strains isolated from Brazilian artisanal cheeses

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In this study, artisanal Coalho cheeses made with raw milk was used as a source of bacteriocin-producing strains with beneficial and technological properties. In addition to be essential for production of fermentation food products, many lactic acid bacteria (LAB) produce bacteriocins with broad spectra of inhibition and could offer potential applications in food preservation. Also, a bacteriocin production by LAB that presents probiotic properties may be an advantage for these strains in competitive interactions with the pathogenic bacteria from the GIT.

A group of more than 200 LAB were isolated from milk and cheeses collected from Vale do Jaguaribe and Sertões Cearenses, traditional Coalho cheese manufacturing region located in Ceará, North-East of Brazil and been investigated for their probiotic potential. Based on the preliminary screening and bacteriocin production ability, *Enterococcus faecium* EM485 and *Enterococcus faecium* EM925 have been selected for future study. High levels of co-aggregation have been observed between *Enterococcus faecium* EM485 and Escherchia coli (78.35±2.16%) or Clostridium spp. (81.13±1.92%) and *Enterococcus faecium* EM925 and Escherichia coli (74.31±3.64%) or Clostridium spp. (81.8% for *Enterococcus faecium* EM485 and 11.33% for *Enterococcus faecium* EM925). *Enterococcus faecium* EM485 and *Enterococcus faecium* EM485 and 11.33% for *Enterococcus faecium* EM485 and 11.33% for *Enterococcus faecium* EM925). *Enterococcus faecium* EM485 and *Enterococcus faecium* EM925. *Enterococcus faecium* EM485 and *Enterococcus faecium* EM925). *Enterococcus faecium* EM485 and *Enterococcus faecium* EM925, were able to grow in presence of 0.5% (w/v) of the sodium salts of taurocholic acid (TC), taurodeoxycholic acid (TDC), glycocholic acid (GC), and glycodeoxycholic acid (GDC), however, only being able to deconjugate GDC and TDC. Both strains showed good survival rates when exposed to the conditions simulating the GIT and resistance to gentamicin, streptomycin, co-trimoxazol and metronidazole. Testing for the presence of genes of collagen protein, aggregation substance, cytolisin, endocarditis antigen, enterococcal surface protein, gelatinase, hyaluronidase, hystidine decarboxylase, ornithine descarboxylase, tyrosine decarboxylase, vancomicin A and vancomicin B genes showed that only tyrosine decarboxylase and vancomicin B genes generated positive PCR results.

Keywords: Enterococcus faecium, probiotic properties, technological properties, virulence factors, antibiotic resistance

## Biography

Svetoslav Dimitrov Todorov has completed his Ph.D. at Sofia University, Sofia, Bulgaria and postdoctoral studies from Stellenbosch University, Matieland, South Africa. At the moment, he is visiting professor at Sao Paulo University, Faculty of Pharmaceutical Sciences, Sao Paulo, Brazil. He has published more than 90 papers in reputed journals and serving as a member of the editorial board. He is reviewer for more than 30 international journals.

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