

In vitro Probiotic Characteristics, Antioxidant, Anticancer Properties of Selected Lactic Acid Bacteria Strains

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Probiotic strains can probably be applied as bio-preservatives and functional food supplement. Eight lactic acid bacteria strains (LAB) *Lactobacillus brevis* NRRL B-4527; *Streptococcus Thermophilus* BLM 58; *Pediococcus acidilactici* ATCC 8042; *Lactobacillus rhamnosus* CCUG 1452; *Lactobacillus curvatus* ATCC 51436; *Lactococcus lactis sub sp. lactis* DSM 20481; *Lactobacillus plantarum* DMSZ 20079 and *Lactobacillus plantarum* TF103 were selected to screen the probiotic properties, antioxidant and anticancer potential. LAB strains exhibited showed antimicrobial activity against food-borne pathogenic. Further, *in vitro* probiotic properties of eight strains displayed excellent acid tolerance, bile tolerance, simulated gastrointestinal juice tolerance, *in vitro* adhesion ability for Caco-2 cell line. The antioxidant effect of intracellular and cell-free extract of lactic acid bacteria strains was evaluated by various antioxidant assays, namely, resistance to hydrogen peroxide, DPPH radical scavenging, ABTS radical scavenging, and hydroxyl radical scavenging (HRS). The results showed that intracellular and cell-free supernatant of *S. Thermophilus* BLM 58, *L. lactis subsp. lactis* DSM 20481, *P. acidilactici* ATCC 8042, *L. brevis* NRRL B-4527 strains possess excellent antioxidant capacity. The intracellular of *S. Thermophilus* BLM 58 and *P. acidilactici* ATCC 8042 also showed the highest anticancer activity against Caco-2, MCF-7, HepG-2 and PC-3 cells. Antioxidant, antimicrobial and anticancer characteristic of elected probiotic *S. Thermophilus* BLM 58 and *P. acidilactici* ATCC 8042 would be valuable in the functional food production industry and therapeutic formulations.

Biography:

Mohamed Gamal Shehata studied Food Science and Technology at the University of Alexandria (UA), Egypt, where he also received his Ph.D. Degree in Food Science. Since 2016, he is Associate Professor at City of Scientific Research and Technological Applications, Department of Food Science and Technology. Mohamed G. Shehata developed probiotic and synbiotic dairy and non-dairy products, for which they evaluate microbiological, physico-chemical, and sensory features during shelf life and their probiotic and synbiotic potential through *in vitro* and *in vivo* tests. He authored 12 papers in international journals and 6 peer-reviewed publications.