

Screening of Antioxidant Activity of Exopolysaccharides Produced by Lactic Acid Bacteria From Human Origin

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Abstract : Exist a large variability in Exopolysaccharides (EPS) produced by LAB depending on carbon source, they have multiple applications in food industry mainly, but they have become important for the health. In this study, we identified EPS-producing strains belonging to the BAL group; they were previously isolated from humans. After that, we extracted and evaluated the antioxidant activity of EPS produced by all strains. Antioxidant activity was determined by DPPH method using ascorbic acid as standard for both comparison and quantification. 31 strains (51.66 %) produced EPS at concentrations between 451 and 1.561 mg/l, 16 of EPS extracted showed antioxidant effect superior to ascorbic acid at the same concentrations. EPS-producing strains were *L. plantarum*, *L. sp* and *L. fermentum* corresponding to *Lactobacillus* genus and, *E. faecium*, *E. durans*, and *E. hirae* of *Enterococcus* genus. Antioxidant activity showed by EPS from 3 strains of *L. plantarum* and 3 strains of *E. faecium* was different into specie, while the antioxidant activity determined for EPS obtained from the other strains did not show difference at specie level, but was superior to ascorbic acid. EPS produced by *L. plantarum* and *E. hirae* had the best activity, it could be considerate for selection them as a possible new alternative for therapy or treatment of diseases related whit oxidative stress. Further studies about biological functions of EPS have to be conducted for new applications in health.

Keywords : oxidative stress, lactic acid bacteria, exopolysaccharides, antioxidant activity

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