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The effect of exopolysaccharide production on cholesterol-reducing activity of *Lactobacillus rhamnosus* strains isolated from traditional Turkish cheeses

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Hypercholesterolemia has been reported to be the main cause of cardiovascular diseases and the leading cause of death. Therefore, decreasing serum cholesterol level is very important for preventing the cardiovascular diseases. It has been supposed that probiotics in human gastrointestinal tract have the ability to decrease serum cholesterol level by reducing the absorption of cholesterol from the intestinal tract. In the present study, the relationship between exopolysaccharide production and cholesterol removalrates of 12 strains of *Lactobacillus rhamnosus* isolated from home-made traditional home made Turkish cheeses wasstudied.The strains have been identified in species level by 16S rRNA gene sequence analysis. Influence of different bile concentrations on cholesterol removal was investigated. It was confirmed that ACS1, BTM3, EDS4 and BTM4 strains which produce high amounts of exopolysaccharide (353, 280, 278 and 277 mg/l, respectively) were able to remove more cholesterol from the medium compared to those that produce low amounts of exopolysaccharide (MP4). The highest amount of cholesterol precipitation (81%) was performed by ACS1 strain, producing a high amount of exopolysaccharide, in the presence of 0.3% (w/v) bile. The results indicated that: (i) there is a correlation between cholesterol removal andEPS production; and (ii) The *Lactobacillus rhamnosus* ACS1 had an excellent ability on hypocholesterolemia in in vitro conditions.

Biography

Derya Önal Darilmaz has completed her PhD from Gazi University. She is working as Associate Professor Doctor in Aksaray University. Her areas of expertise are probiotics, food microbiology and microbial biotechnology. She has published more than 15 papers in reputed journals and serving as an Editorial Board Member and referee in different reputed journals.

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