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Investigation of probiotic properties of chicken originated *Enterococcus faecium* and *Lactobacillus* species*

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Statement of the Problem: In this study, the isolation of *Lactobacillus* spp. and *Enterococcus faecium* and investigation of usage potential of isolated bacteria as probiotic were aimed.

Methodology & Theoretical Orientation: In a study, 50 chicken intestines were investigated which were taken from a commercial chicken slaughter house in Samsun region. The samples were taken from intestine mucosa and inoculated to the selective mediums for the isolation of *Lactobacillus* spp. and *E. faecium*. Suspected colonies were identified by PCR. The isolated bacteria were investigated for bile (0.5-1%) and pH (3-5) resistance by bile and pH tolerance tests, respectively. The hydrophobicity's of the isolates were tested by using 0.03% Congo Red Agar. The antibiotic resistances of the isolates were determined by Agar Gel Disc Diffusion Test with using 9 antibiotic discs. The Radial Diffusion Method was used for determining the antagonistic effects of the isolates against *Escherichia coli*.

Findings: Twenty *E. faecium*, 21 *Lactobacillus* spp. (9 of them were *L. acidophilus*) isolated from samples. All the isolates were found as resistant to tested bile and pH conditions. All the isolates were hydrophobic, but none of them had an antagonistic effect against *Escherichia coli*. Eight of *E. faecium* isolates were found as resistant to 8 antibiotics. One *Lactobacillus* spp. (other than *L. acidophilus*) and 1 *L. acidophilus* isolates were resistant to 5 and 7 antibiotics, respectively. These isolates were evaluated as multi-antibiotic resistant strains.

Conclusion & Significance: In conclusion, we evaluated that all the isolates were hydrophobic, resistant to bile and low pH conditions; but none of them had an antagonistic effect against *Escherichia coli* in tested conditions. These results indicated that the multi-antibiotic resistant strains of *E. faecium*, *L. acidophilus* and *Lactobacillus* spp. isolates had a potential of using as a probiotic and further in vivo studies had to be essential for these strains.

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Biography

Alper Ciftci is an expert in Molecular Microbiology and Vaccine Development. He has completed his PhD at Ankara University, and now he works as Associate Professor at Ondokuz Mayıs University, Samsun, Turkey. He focuses on working development and validation of commercial products such as vaccine and diagnostic kits.

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