

## Molecular Identification and Plasmid Content Analysis of *Lactobacillus pentosus* and *Lactobacillus paraplantarum* Strains Isolated from Naturally Fermented Pickles

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**Aim of the study:** In this study, *Lactobacillus paraplantarum* and *Lactobacillus pentosus* strains isolated from naturally fermented pickles were tested for plasmid content and antibiotic resistance after molecular identification.

**Material and Methods:** A total of 55 pickles were collected randomly from 17 different regions of Turkey. Suspicious Lactic Acid Bacteria colonies (161) were isolated from deMan, Rogosa and Sharpe (MRS) agar for further biochemical and morphological identification tests. Suspicious 35 isolates were identified based on *recA* gene and 16S rRNA PCR amplification followed by sequencing. The plasmid contents and antibiotic resistance properties of isolated *L. pentosus* and *L. paraplantarum* strains were determined. Isolation of plasmids were achieved with a modified commercial plasmid DNA extraction mini kit. Disc diffusion method for antimicrobial resistance profiles of isolates were performed with antibiotics including erythromycin, penicillin, ampicillin, gentamycin, rifampicin, clindamycin, amoxicillin / clavulanic acid, ampicillin sulbactam, oxacillin, and aztreonam.

**Results:** 14 *L. pentosus* and 2 *L. paraplantarum* strains were identified based on *recA* gene and 16S rRNA PCR followed by 16S rRNA sequencing. Both *L. pentosus* and *L. paraplantarum* isolates contained an average of 1 plasmid and had up to three different plasmids. The percentage of antibiotic resistance and susceptibility for all isolates were as follows: Penicillin 93.5 and 6.5%, gentamicin 93.5 and 6.5%, rifampicin 62.5 and 37.5%, clindamycin 93.5 and 6.5%, amoxicillin 6.5 and 93.5%, ampicillin sulbactam 6.5 and 93.5%, erythromycin 0 and 100%, oxacillin 100 and 0%, aztreonam 100 and 0% and ampicillin 0 and 100% respectively. No relationship was detected between antibiotic resistance and plasmid content for tested isolates.

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**Keywords:** *L. paraplantarum*, *L. pentosus*, Molecular Identification, Plasmid, Antibiotic Resistivity.