

**Molecular typing of *Staphylococcus aureus* Strains Isolated from Ready-to-Eat Foods by PCR-RFLP**

Seza ARSLAN, Fatma ÖZDEMİR

Department of Biology, Faculty of Arts and Science, Abant İzzet Baysal University, Turkey  
*arslan\_s3@ibu.edu.tr*

**Aim of the study:** Food-borne infections is caused by *Staphylococcus aureus* and a serious problem for public health. Typing of *S. aureus* play an important role in the evaluation of strain origin and epidemiological investigations. Several molecular typing methods can be used for characterization of *S. aureus* strains. Typing of *S. aureus* strains by polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP) of the *coa* gene is an inexpensive, easy and rapid. The aim of the current study was to carry out *coa* typing for differentiation of the *S. aureus* strains isolated from ready-to-eat foods based on PCR-RFLP patterns.

**Material and Methods:** *S. aureus* strains isolated from ready-to-eat foods including kavurma, doner, salad, dessert, and cheese were analysed for typing based on PCR-RFLP of the *coa* gene. The 13 *S. aureus* strains were subjected to PCR for determination of the variability of the 3' region of the *coa* gene. Amplification products of the *coa* gene were digested by *HaeIII* restriction enzyme according to manufacturer's procedure. Genetic analysis was carried out using the NTSYS-pc (version 2.10) software package. Each band of RFLP was recorded as 1 for presence and 0 for absence. Similarity among the strains was determined using Dice coefficient. A dendrogram was constructed by the unweighted pair-group method with average linkages (UPGMA).

**Results:** In this research, 13 *S. aureus* strains from ready-to-eat foods were tested for determination of genetic similarity using the *coa* gene based on PCR-RFLP method. The amplification of the *coa* gene of *S. aureus* strains generated 5 different genotypes. Of the *S. aureus* strains, one strain produced three different bands and 12 strains produced single amplicon of the *coa* gene. PCR-RFLP of the *coa* gene demonstrated 8 patterns which were obtained with *HaeIII* digests of PCR products. Typing of *S. aureus* based on PCR-RFLP of the *coa* gene can be significant in the evaluation of the genetic diversity among *S. aureus* isolates from food origin.

**Keywords:** *Staphylococcus aureus*, *coa*, RFLP, restriction enzyme, ready-to-eat food.