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Investigation of *Staphylococcus aureus* Enterotoxins A to E Via Real-Time PCR from Various Food Samples in Turkey

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Abstract

The aim of this study was to investigate the Staphylococcal enterotoxin (SE) and directly detect the five classical SEA, SEB, SEC, SED and SEE gene in *Staphylococcus aureus* strains from different food samples by real-time PCR. We studied totally 3650 different food samples such as milk and dairy products, meat and meat products, poultry and eggs, canned food, coffee, cocoa and derived products, honey, confectionery and bakery, ready-to-eat foods, beverages in food control laboratory. We found that a total of 36 (0.98%) *S. aureus* strains were isolated and only 14 (0.38%) out of 36 *S. aureus* strains were found to be enterotoxigenic. Milk samples were found to be most contaminant among the products. The most prevalent SE types were SEA 7 (19.4%). Commercial EIA kit results were used to compare with the real-time PCR results. SE results were found to be same with these two methods. This study showed that prevalence and type of the staphylococcal enterotoxin may vary from food to food. It is important to know this data to prevent outbreaks. Additionally, automated DNA isolation and real-time PCR methods can be performed to direct enterotoxin gene detection rapidly and reliably. This technique can be also used for food safety and clinical diagnosis applications.

Key words: Direct detection, Enterotoxin genes, Food, Real-time PCR, *Staphylococcus aureus*



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