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Czech J. Food Sci.

**Valihrač L.,
Demnerová K.,**

Karpišková K.,

Melenová I.:

The expression of selected genes encoding enterotoxins in *Staphylococcus aureus* strains

Czech J. Food Sci., 27 (2009): 56-65

Staphylococcus aureus is an important food-borne pathogen, which produces many toxic substances that cause a variety of illnesses. Some strains of *S. aureus* produce thermostable enterotoxins that can be responsible for alimentary intoxication. The aim of this work was to establish a protocol for the study of 9 enterotoxin genes expression (*sea-sej*). First, a method for the detection of genes encoding enterotoxins was established and then a method for the determination of the expression of these genes was optimised, using a range of the PCR techniques (multiplex, touchdown and real-time). The

expression of staphylococcal enterotoxin genes was evaluated both qualitatively and quantitatively. In present study were used *S. aureus* strains from culture collections as well as those newly-isolated from raw milk samples. The obtained results indicate the various expression of the different genes for enterotoxin. However the main benefit of this work is the established protocol for the study of enterotoxin gene expression, which can provide a better understanding of the conditions for the enterotoxins production.

Keywords:

staphylococcal enterotoxin; gene expression; multiplex PCR; real-time PCR; mRNA analysis

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