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Czech J. Food Sci.

Trivedi K., Sedmíková R., Karpířková R.:

Bacteriocin activity of enterococci and presence of genes related to pathogenesis

Czech J. Food Sci., 30 (2012): 330-335

In total 228 enterococci strains isolated from food were studied. *Enterococcus faecalis*, *E. faecium*, and *E. casseliflavus* were found to be the dominant strains while *E. durans* and *E. mundtii* were present in a smaller extent. Antimicrobial activity determined by double layer technique revealed that 150 (65.7%) strains showed antimicrobial activity against the individual tested pathogenic strains of *Listeria monocytogenes*, *Staphylococcus aureus*, and methicillin resistant *S. aureus* (MRSA). Cell-free neutralised supernatants (CFNS) were prepared from 150 potential bacteriocin producers. Of these 150, CFNS 107 (71.3%) strains were active in the bacteriocin production against one or more pathogenic strains tested. *S. aureus*

and *MRSA* were found to be more sensitive to the antimicrobial substances than *L. monocytogenes*. Multiplex PCR for the detection of seven virulence genes in bacteriocin producing strains showed that 47.6% of strains were able to amplify one or more virulence genes. *E. faecalis* was the most virulent species. The presence of *tyrdc* gene was seen in all bacteriocin producing strains. None of the strains carried genes encoding the resistance to vancomycin.

Keywords:

food; antimicrobial activity; virulence genes; *tyrdc* gene; *Listeria monocytogenes*; *Staphylococcus aureus*; methicilin resistant *Staphylococcus aureus*

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