

Occurrence of Ent A Gene in Indigenous *E. faecium* of Iran and Antimicrobial Activity of Ent A on Human Pathogens

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Background & Objectives: Enterococci are lactic acid bacteria with ability to produce antimicrobial peptides—bacteriocins (enterocins) and recently the number of characterized enterocins has been significantly increased. Target of present study is survey about indigenous enterococci of Iran bacteriocins for their potential as biopreservatives in food or feed, probiotics and treatment of multidrug-resistant diseases.

Methods: In this study occurrence of class II enterocin structural gene (enterocinA) in a target of *Enterococcus faecium* isolated from 63 samples of different locales of Tehran animal faeces have been surveyed. Enterococcal strains were isolated from other faeces Gram-positive and negative bacteria using Bile Aesculin Azide Agar medium and after strains purifications, *E. faecium* species identification and occurrence of enterocin A gene was performed by PCR Methods. Cell-free neutralized supernatant (of selected gene positive strains) was used to test bacteriocin production and antimicrobial spectrum of supernatant was assayed by diffusion Methods (disk and wall) on the gram-positive and negative indicators bacteria.

Results: 11 strains of *E. faecium* (17.5 %) were purified from 63 isolated samples. 9 strains of these 11 *E. faecium* strains (81.8 %) had enterocin A gene that they inhibited growth of indicator bacteria such as clinical strain of *Pseudomonas aeruginosa*, *Salmonella enterica* PTCC1709, *Listeria monocytogenes*, *Bacillus cereus* and *Bacillus subtilis*.

Conclusion: Studied enterocins have growth inhibitory spectrum on Gram-positive bacteria such as *L. monocytogenes*, *B. cereus*, *B. subtilis* and Gram-negative bacteria such as *Salmonella enterica* PTCC1709, *Erwinia amylovora* and *P. aeruginosa*. Therefore, these strains have the potential to explore and use as probiotics and food industry.

Keywords: *Enterococcus faecium*; PCR; Enterocin A