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Specific detection of coagulase positive methicillin-resistant *Staphylococcus aureus* by multiplex PCR method

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Background and Aims: This study conducted to implement, for the first time in our laboratory, a triplex PCR technique for detection of genes encoding resistance to methicillin (mecA and femA) in Staphylococcus aureus from clinical samples.
Methods: After sample collection from three University hospitals in Zanjan province, antimicrobial susceptibilities were determined by Kirby-Bauer disk diffusion according to the NCCLS recommendation. DNA was extracted by phenol – chloroform standard method. By using multiplex PCR strategy two regions of mecA and femA genes were co amplified. A third Staphylococal genomic region was used as internal control and PCR products were analyzed by electrophoresis.
Results: 50 methicillin-resistant S. aureus indentified by antibiotic susceptibility testing from hospitals of Zanjan University of Medical Sciences. The mecA and femA were found in 100% of coagulase positive S. aureus.
Conclusions: These results suggest that the multiplex PCR method mentioned above can be used to provide a specific, rapid, simple, and highly sensitive detection of coagulase positive S. aureus in clinical samples.

Keywords: *S. aureus*; Multiplex PCR; mecA; femA