

Genes capsule overview (cap5 & cap8) in identify Methicillin-Resistant Staphylococcus aureus from clinical samples

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Abstract

Staphylococcus aureus (*S. aureus*) is an important pathogen that is involved in causing various infections. In recent years, attempts to treat infections caused by these strains have led to resistance to most antibiotics, especially methicillin and vancomycin. In this study, we evaluated genes capsule in MRSA isolated from clinical samples of hospitals affiliated with the Tehran University of Medical Sciences. 73 clinical samples suspected of MRSA were collected and confirmed phenotypically and biochemically. PCR was done by studying the presence of cap8, cap5, vanA, and mecA genes. All 73 samples were confirmed as MRSA both by biochemical tests and by examining the presence of the mecA gene. Wound with 21 (28.77%) was the most, and synovial fluid with 1 (1.36%) was the least analyzed sample. The ICU department had the highest amount of MRSA samples, with 25 (34.24%), and the ENT, with 1 (1.36%), had the lowest amount. 32 isolates (43.84%) contained the cap5 gene, 27 (36.99%) cap8 gene, and 5 (6.84%) had the vanA gene. Among the isolated VRSAs, 2 (40%) isolates contained both cap5&8 genes simultaneously. The results of antimicrobial tests showed multi drugs resistance in these isolates.

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