

**METHICILLIN-RESISTANT
STAPHYLOCOCCUS AUREUS
Epidemiology and SCCmec Typing**

**Nasreen Mohammad Alarosi
Mohammed Imad Al-Deen Mustafa Mahmoud**



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METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS

Epidemiology and SCCmec Typing

Staphylococcus aureus is a major human pathogen. It causes a wide range of infections in the hospital setting as well as in the community environment. A broad variety of infections, ranging from minor pyodermas to life-threatening infections can be caused by *S. aureus*. The adaptive power of *S. aureus* to antibiotics lead to the emergence of methicillin-resistant *S. aureus* (MRSA) in the early 1960s. The cause of resistance to methicillin is the acquisition of the *mecA* gene, which is situated on a mobile genetic element, the staphylococcal cassette chromosome *mec* (SCCmec). Five major variants of SCCmec, types I to V, are distinguished. One of the most important techniques used to investigate the molecular epidemiology of *S. aureus* is SCCmec typing. This technique has been used to study the evolution of the MRSA and to study their subsequent worldwide dissemination. This research book reviews the literature for previous research on MRSA epidemiology, antibiotic resistance and SCCmec typing methods. It also covers characterization of MRSA isolates obtained from patients attending Tengku Ampuan Afzan Hospital (HTAA) in Kuantan, Pahang, Malaysia.

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