

# ASSESSMENT OF DIFFERENT TESTS TO DETECT METHICILLIN RESISTANT *STAPHYLOCOCCUS AUREUS*

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**Abstract.** The heterogeneous expression of methicillin resistance in *Staphylococcus aureus* affects the efficiency of tests available to detect it. Not all laboratories have access to accurate molecular tests used for this purpose. This study compares the performances of four phenotypic tests used to detect methicillin resistant *S. aureus* (MRSA) with the *mecA* gene polymerase chain reaction. Two hundred thirty-seven *S. aureus* isolates were isolated from different patients visiting Sir Sundar Lal Hospital, Banaras Hindu University, Varanasi, India and subjected to cefoxitin and oxacillin disc diffusion tests, oxacillin minimum inhibitory concentration (MIC) test, and oxacillin screen agar test. The tests showed the following sensitivities and specificities, respectively: cefoxitin disc diffusion (98.5% and 100%), oxacillin disc diffusion (77.3% and 84.6%), oxacillin MIC (89.4% and 87.2%), and oxacillin screen agar (87.9% and 94.9%). The cefoxitin disc diffusion test can be the best method for routine detection of MRSA when molecular techniques are not available. We recommend the Clinical Laboratory Standards Institute (CLSI) cut-off point for determining cefoxitin resistance be reexamined to see if it should be revised from  $\leq 19$  mm to  $\leq 20$  mm.

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