

Revised Method of Testing Staphylococci

Methicillin antibiotic discs will not be available after October 2004. The results of published studies showed that no single antibiotic disc was a suitable replacement for methicillin 5µg for testing members of the genus staphylococcus. Despite extensive studies in our own laboratory we also were unable to find one antibiotic to replace methicillin. We now have calibrated cefoxitin 10µg discs for separating strains of *Staph. aureus* with the *mecA* gene from those without it. Oxacillin 1µg discs were found to be the most suitable for testing coagulase negative staphylococci and were calibrated for this group of staphylococci with the exception of *Staph. saprophyticus*. Instead this species, when it is a urinary pathogen, is tested using a cephalixin 100µg disc (see table 1b in Manual).

If the antibiotic susceptibility test is set up before the staphylococcus has been speciated it may be necessary to use both a cefoxitin 10µg and an oxacillin 1µg disc. The interpretation of the results is as follows.

Staph. aureus

With *Staph. aureus* use the result obtained with the cefoxitin disc and ignore that with oxacillin. With strains that have the *mecA* gene the inhibitory zone around cefoxitin is <6 mm in annular radius (usually 0-3 mm). Report this isolate as resistant to methicillin. With strains that lack the *mecA* gene, the inhibitory zone around cefoxitin is ≥6 mm in annular radius and is usually 8-10 mm. Report this isolate as susceptible to methicillin.

Coagulase-negative staphylococci

With coagulase-negative staphylococci use the result obtained with the oxacillin disc and ignore that with cefoxitin. With strains that have the *mecA* gene the inhibitory zone around oxacillin is <6 mm in annular radius (usually 0-4 mm). Report this isolate as resistant to methicillin. With strains that lack the *mecA* gene, the inhibitory zone around oxacillin is ≥6 mm in annular radius and is usually 7-10 mm. Report this isolate as susceptible to methicillin.

Incubation time.

With *Staph. aureus* and cefoxitin; based on results with the strains we have tested so far there is no need to reincubate for 48 hours. The results are clear-cut after overnight incubation, but if there is any doubt we suggest reincubating the plates until next day. With coagulase negative staphylococci and oxacillin; we recommend that as a routine to reincubate the plate for 48 before finally declaring the organism susceptible.

Acceptable ranges of zone sizes with the reference strain:

Staph. aureus NCTC 6571

Cefoxitin 10µg 7.1mm to 10.1mm

Oxacillin 1µg 7.4mm to 10.4mm