

Carbapenemase activity in isolates of *K. pneumoniae*

Explanation of indications for confirmatory tests for carbapenemase activity

Questions:

If a *K. pneumoniae* isolate has an MIC = 2 ug/ml to ertapenem and an MIC of 2 to 4 ug/ml to imipenem or meropenem, what additional testing is warranted

Test for inducible Clindamycin resistance

Modified Hodge test for carbapenemase activity

ESBL test for extended spectrum beta-lactamase activity

PBP2a or mec A test for oxacillin resistance

Discussion:

The following specific information for Enterobacteriaceae is provided in the Clinical and Laboratory Standards Institute (CLSI) guidelines:

Enterobacteriaceae that are resistant to one or multiple agents in cephalosporin subclass III and that demonstrate elevated MICs to carbapenems may produce a carbapenemase, despite the fact that the MICs may fall within the current susceptible range.¹

MICs listed below may indicate carbapenemase production despite the fact that they are in the current susceptible interpretive categories. For confirmation perform the modified Hodge test.²

Ertapenem 2 ug/mL

Imipenem 2-4 ug/mL

Meropenem 2 to 4 ug/mL

Answers:

Modified Hodge test for carbapenemase activity

¹ CLSI M100-S19 Table 2A, Pg 40

² CLSI M100-S19, Appendix G, Pg 137