



Carbapenem Resistance Genes, Molecular Detection, PCR, Rectal Swab

Test ID: CRPCR

Useful for:

Detecting and differentiating the *blaKPC*, *blaNDM*, *blaVIM*, *blaOXA-48*, and *blaIMP* gene sequences associated with carbapenem intermediate or resistant results.

Aiding in infection control in the detection of gastrointestinal colonization of patients in healthcare settings with bacteria not susceptible to carbapenems using rectal or perirectal swabs.

Ordering Guidance:

This test is performed on rectal and perirectal swab specimens from patients at risk for intestinal colonization with bacteria not susceptible to carbapenem antimicrobials.

Other mechanisms of carbapenem resistance, including carbapenemases not targeted by this assay, porin mutations, and hyperexpression of drug efflux pumps, may result in carbapenem resistance. These mechanisms are not detected by this assay.

Methodology:

Real-Time Polymerase Chain Reaction (RT-PCR)

Specimen Requirements:

Specimen Type: Rectal/perirectal swab

Supplies: Culturette (BBL Culture Swab) (T092)

Container/Tube: Culture transport swab

Specimen Volume: Entire collection

Specimen Stability Information:

Specimen Type	Temperature	Time
Swab	Ambient	5 days

Cautions:

The Xpert Carba-R Assay detects *blaKPC*, *blaNDM*, *blaVIM*, *blaOXA-48*, and *blaIMP* from rectal and perirectal specimens and is not for bacterial identification. Detection of these gene sequences does not indicate the presence of viable organisms.

The Xpert Carba-R Assay is not a genetic-relatedness subtyping tool and does not report variants of the *blaKPC*, *blaNDM*, *blaVIM*, *blaOXA-48*, or *blaIMP* genes.

Imipenemase-type metallo-beta-lactamase (IMP) types detected by this assay include only IMP-1, 2, 4, 6, 10, and 11.

Rectal and perirectal specimens from pediatric patients have not been evaluated.

Certain bacterial species, such as *Pseudomonas aeruginosa* and *Acinetobacter baumannii*, have been shown to exhibit resistance to the carbapenem antimicrobial ertapenem due to intrinsic resistance mechanisms.

The detection of OXA-carbapenemase genes, besides *blaOXA-48* and *blaOXA-181*, has not been evaluated with this assay.

Variants or alterations in primer or probe binding regions may affect detection of current, new, or unknown *blaKPC*, *blaNDM*, *blaVIM*, *blaOXA-48*, and *blaIMP* variants, resulting in a false-negative result.

Testing with the Xpert Carba-R assay should be used as an adjunct to other available methods.

Cocolonization with 2 or more carbapenemase-producing organisms has been reported with the Xpert Carba-R Assay, but it is rare.

Carbapenem-resistant anaerobes potentially present in fecal specimens have not been evaluated by the Xpert Carba-R assay.

CPT Code:

87798

Day(s) Performed: Monday through Sunday

Report Available: Same day/1 day

Questions

Contact Brandon DeBoom, Laboratory Resource Coordinator at 800-533-1710.