

## MASTDISCS® ID

### Carbapenemase Activity Test (CAT-ID) discs

#### D71C

#### Intended use

For the detection of carbapenemase activity in Enterobacterales.

FOR IN VITRO DIAGNOSTIC USE ONLY

#### Contents

5 cartridges per pack, each cartridge containing approximately 50 discs.

#### Formulation\*

6mm diameter filter paper discs impregnated with faropenem.

#### Storage and shelf life

Store at 2 to 8°C in the containers provided until the expiry date shown on the pack label. Allow to equilibrate to room temperature before opening.

#### Precautions

For *in vitro* diagnostic use only. Observe approved biohazard precautions and aseptic techniques. To be used only by adequately trained and qualified laboratory personnel. Sterilise all biohazard waste before disposal. Refer to Product Safety Data sheet.

#### Materials required but not provided

Standard microbiological supplies and equipment such as loops, MAST® culture media, Mueller-Hinton agar, swabs, forceps etc., as well as an incubator capable of maintaining 35 ± 1°C.

#### Procedure

- Using a pure, fresh culture of the test organism, prepare a suspension equivalent in density to a 0.5 McFarland standard in physiological saline.
- Using a sterile swab, spread the suspension uniformly across the surface of a Mueller Hinton Agar plate in accordance with the European Committee on Antimicrobial Susceptibility Testing (EUCAST) procedure.
- Using a MAST® DISCMASTER Dispenser, or alternatively a sterile needle or forceps, place a disc on to the plate of inoculated medium.
- Incubate at 35 ± 1°C for 18 ± 2 hours.
- Record the presence or absence of a zone of inhibition around the disc, and note the presence of any microcolonies within the zone.

#### Interpretation of results

No zone of inhibition is indicative of carbapenemase activity e.g. MβL (metallo-β-lactamase) or KPC (*Klebsiella pneumoniae* carbapenemase). A small number of OXA-48 (oxacillinase) producing organisms may also appear resistant.

A clearly defined zone of inhibition is indicative of no carbapenemase activity.

A zone of inhibition with colonies growing within the zone (double zone) is indicative of OXA-48 (oxacillinase) production.

#### Quality control

Check for signs of deterioration. Quality control must be performed with at least one organism to demonstrate a positive reaction and at least one organism to demonstrate a negative reaction. Do not use the product if the reactions with the control organisms are incorrect. The list below illustrates a range of performance control strains which the end user can easily obtain:

Test Organism	Result
<i>Klebsiella pneumoniae</i> NCTC 13440 (MβL)	No zone of inhibition
<i>Klebsiella pneumoniae</i> NCTC 13438 (KPC)	No zone of inhibition
<i>Klebsiella pneumoniae</i> NCTC 13442 (OXA-48)	Double zone
<i>Escherichia coli</i> ATCC® 25922 (Negative)	Clear zone of inhibition

#### Limitations

D71C is not suitable for use with *Pseudomonas* spp. or *Acinetobacter* spp.

The presence of a carbapenemase resistance mechanism should be confirmed by phenotypic (e.g. MASTDISCS® *Combi Carba plus*: D73C) or genotypic methods. A small proportion of non- carbapenemase producing Enterobacterales may demonstrate resistance to faropenem.

#### References

Bibliography available on request.