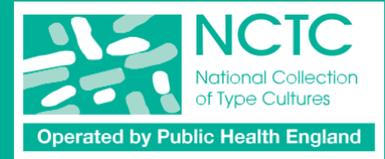


Antimicrobial Resistance



National Infection Service Laboratories: Carbapenemase Controls

New custom-made LENTICULE discs containing representatives of the 'big five' carbapenemase families seen in the UK

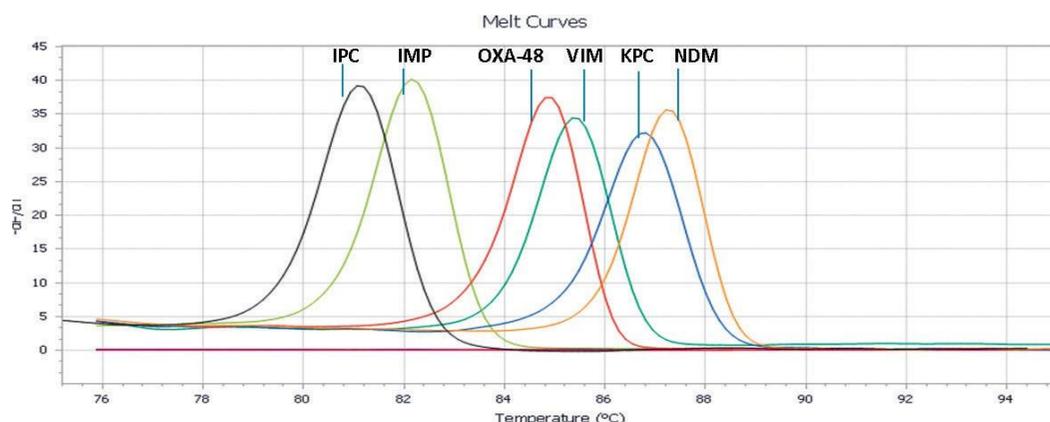
In collaboration with PHE's Antimicrobial Resistance and Healthcare Associated Infections (AMRHAI) Reference Unit, a custom-made LENTICULE disc product has been developed that can be used as a 'five-in-one' antimicrobial resistance gene control for multiplex PCR assays.

There are five carbapenemase families known as the 'big five', which are most commonly seen in the UK: KPC, OXA-48-like, NDM, VIM and IMP.

Each LENTICULE disc control contains the following representative organisms:

- NCTC 13438 *Klebsiella pneumoniae* KPC-3
- NCTC 13442 *Klebsiella pneumoniae* OXA-48
- NCTC 13443 *Klebsiella pneumoniae* NDM-1
- NCTC 13437 *Pseudomonas aeruginosa* VIM-10
- NCTC 13476 *Escherichia coli* IMP-type (unsequenced)

Carbapenemase genes are easily identifiable from the melt curve and results have been shown to be standardised and consistently reproducible in internal laboratory testing at AMRHAI. The discs can also be used when doing conventional, block based, PCR.



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LENTICULE disc format:

The discs consist of bacteria in a solid water-soluble matrix that is stable and easy to use. LENTICULE discs must be stored at $-20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ although short periods at ambient temperature, such as during transportation, do not affect viability. The format is not assay dependent and can be used for any platform.

Benefits:

Control failure has a big impact on efficient laboratory working. Use of LENTICULE discs can help to reduce the risk of assay failure and the need to re-test batches of samples.

Viability – LENTICULE disc format reduces damage due to freezing

Stability – no need to passage strains, therefore characteristics are not lost

Sterility – single use only, reduces risk of contamination

By using LENTICULE discs you can save money, preparation time and space in the platform by having five controls in one reaction. In addition, use could help laboratories that are screening bacterial cultures to meet ISO15189 section 5.6.2.2, which states: “The laboratory shall use quality control materials that react to the examining system in a manner as close as possible to patient samples.”

Register your interest:

To find out more and register your interest in this new product please go to:
www.phe-culturecollections.org.uk/AMRcontrols

References:

1. ISO 15189:2012 Medical laboratories -- Requirements for quality and competence