**Introduction**

Carbapenemase producing organisms (CPOs) are of major worldwide public health concern [1][2]. Rapid detection of these genes is vital to improve patient care, and to minimise onward transmission of infection. Standard diagnostic methods in many clinical laboratories are time consuming, and are limited in the range of Carbapenemase genes they detect [3]. As such, there is a demand in diagnostic laboratories for highly-sensitive, specific and rapid diagnostic systems for better management of risks associated with CPOs.

**Aim:** To evaluate the performance of Novodiag CarbA+ panel (Version 1.0, Ref- NVD-CRB-012, LOT-00311048, October 2018)

**Type of evaluation (CarbA+ test)**

- **Aspect 1:** Testing of known Carbapenemase positive isolates to evaluate test performance
- **Aspect 2:** Evaluation of performance against culture with simulated rectal swab specimens for the provided limit of detection (LOD) 1x, 3x and 10x

**CarbA+ test – An easy to run assay**

1. Inactivation of sample in eNAT tubes (minimum 30 minutes)
2. Loading of sample on cartridge (600µl)
3. Cartridge run (80 minutes) on Novodiag system

**Discussion**

- Carbapenemase producing isolates could lose their plasmid in subsequent sub-culture if non-selective plates are used, resulting in unexpected test results.
- Unavailability of confirmatory test in our laboratory to rule out true negative/true positive results.
- Presence of ISAab1 promoter gene on isolate bearing OXA-51 like is unknown. Novodiag Carba R+ only detects OXA-51 like in presence of ISAab1 promoter.
- Low detection rate on lower dilution, could be related to non-selective plate subsequent sub-culture (loss of plasmid).

**Conclusion**

- The detection rate of Novodiag Carba R+ test is very promising. It includes a wider range of Carbapenemase markers compared to a diagnostic assay e.g. Cepheid currently used by NUH. It has potential to improve diagnostic efficacy within a busy diagnostic laboratory.
- The assay is operator friendly, easy to run, interpret and requires minimum hands on time.
- Reliable test results with built-in internal control system.
- Single-use, test specific cartridges are easy to identify with clear label test information and can be stored at room temperature.
- eNAT tube chemical deactivation allows for safe specimen handling within the laboratory area, so can easily fit with laboratory demands and workflow.

**Acknowledgements**

The authors would like to thank Mobidiag for funding this evaluation project, and also thank the Clinical Microbiology Department at NUH for their support.

**References**

