

TRUPCR® Carbapenem Resistance Detection Kit

NEED

Carbapenem resistance is a major and an on-going public health problem globally. It occurs mainly among Gram-negative bacteria. Infections by such pathogens pose a serious threat to hospitalized patients due to resistance of all beta-lactam antibiotics as well as co-resistance to most other antibiotics, leaving very few treatment options which are associated with clinical and economic consequences. Culture is the reference method for detection, requires at least a turn-around time of between 2-3 days which will be critical in emergency and ICU patients when the time available for intervention is limited. New CLSI recommendations aim to speed up detection and improve treatment outcomes for Carbapenem resistance through use of a molecular diagnostic test.



SOLUTION BY TRUPCR®

TRUPCR® Carbapenem Resistance Detection Kit is an in vitro nucleic acid amplification assay for the qualitative detection and differentiation of the most prevalent carbapenemases gene families – *bla_{KPC}* (KPC-Klebsiella pneumoniae carbapenemase), *bla_{NDM}* (NDM-New Delhi Metallo-beta-lactamase), *bla_{VIM}* (VIM-Verona integron-mediated metallo-beta-lactamase), *bla_{OXA-48}* (OXA-48-Oxacillinase-48) and *bla_{IMP}* (IMP-Imipenemase metallo-beta-lactamase) on Real-Time PCR. There is a multiplexing reaction running in parallel in two tubes to detect different targets with the help of three different dyes (FAM, Yellow/HEX/VIC & Orange/ROX/TEX Red).

TARGET PATHOGENS

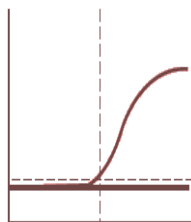
Primer Probe Mix-1

FAM	HEX	TEX RED
<i>bla_{KPC}</i>	<i>bla_{NDM}</i>	Internal control

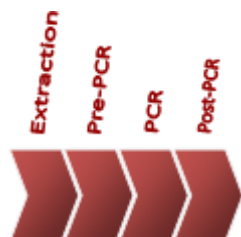
Primer Probe Mix-2

FAM	HEX	TEX RED
<i>bla_{OXA-48}</i>	<i>bla_{VIM}</i>	<i>bla_{IMP}</i>

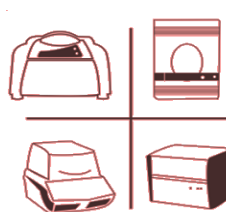
KEY FEATURES



Internal Control incorporated within the kit to ensure reliable results



Complete workflow solution available from Extraction of sample to Post-PCR analysis



Platform agnostic as compatible with various platforms



Rapid and reliable results within 100-120 minutes after PCR Start

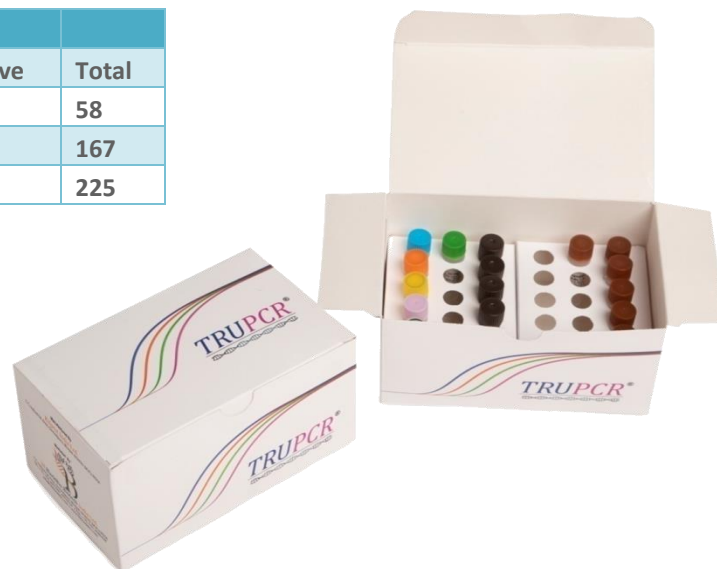
TECHNICAL SPECIFICATIONS

- Sample Type – Pure Colonies, Perirectal or Rectal swabs, Sputum, BAL, Pus, Aseptic fluid, Bacterial Cultures
- Target Regions – Conserved region of *bla_{KPC}*, *bla_{NDM}*, *bla_{VIM}*, *bla_{OXA-48}*, and *bla_{IMP}* gene
- Validated on more than 500 clinical samples
- LoD: 10³ copies/ml
- Internal Control has been integrated into the kit in order to check PCR inhibition
- Reaction Volume – 25µl in each tube
- Compatible Instruments – Applied Biosystems™ 7500 series, QuantStudio® series, Bio-Rad CFX96, Rotor-Gene Q

CLINICAL DATA

		Reference Method		
		Positive	Negative	Total
TRUPCR Method	Positive	56	2	58
	Negative	3	164	167
Total		59	166	225

Parameters	Estimate
Sensitivity	95.16%
Specificity	98.80%
Positive Predictive Value	96.72%
Negative Predictive Value	98.22%



ORDERING INFORMATION

Cat. No.	Description	Size
3B289	TRUPCR® Carbapenem Resistance Detection Kit	48 Reactions
3B290	TRUPCR® Carbapenem Resistance Detection Kit	96 Reactions

