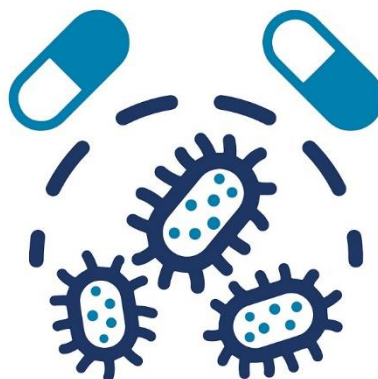# TRUPCR® AST Panel Kit

NEED

The discovery and use of antibiotics are two of the most significant breakthroughs in twentieth-century medicine—leading to dramatic reductions in human morbidity and mortality. One emerging problem with antibiotics is the development of antibiotic-resistant bacteria. Antimicrobial resistance (AMR) occurs when microbes evolve mechanisms that protect them from the effects of antimicrobials. Infections due to AMR cause millions of deaths each year. So, antibiotic resistance is one of the most urgent threats to public health. Effective treatment of infection depends on the accurate identification of the pathogen(s) and the correct choice of antibiotic(s). Hence accurate antimicrobial susceptibility (AST) profiling of a pathogen is very important.

SOLUTION BY TRUPCR®

TRUPCR® AST Panel Kit is an in vitro nucleic acid amplification assay for the qualitative detection & differentiation of antimicrobial resistance genes encoding resistance to antibiotics - Trimethoprim/Sulfamethoxazole (SXT), Extended-spectrum beta-lactams (ESBLs), Carbapenems, Vancomycin and Methicillin using Real Time PCR System. It includes five tubes targeting fourteen antibiotic resistant genes. This assay is based on TaqMan hydrolysis probe which allows higher specificity and sensitivity.

The targets are detected with the help of four different dyes (FAM/Green, HEX/Yellow, Texas Red/Orange and Cy5/Red). This kit can be used with the extracted genomic DNA from clinical samples or cultured isolates.
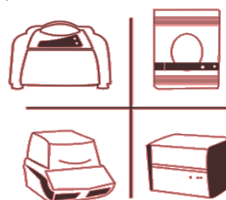
KEY FEATURES
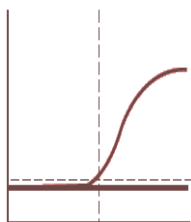
Endogenous Internal Control incorporated within the kit to ensure reliable results
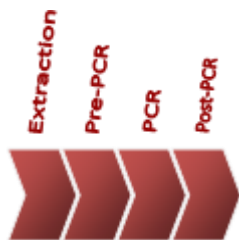
Complete workflow solution available from Extraction of sample to Post-PCR analysis

Platform agnostic as compatible with various platforms

Rapid and reliable results within 60 minutes after PCR Start

TARGET ANTIBIOTIC RESISTANCE GENE

Primer Probe Mix 1

FAM	TEX RED	Cy5	HEX
SXT	SXT	SXT	Endogenous
(*sul2*)	(*dfrA1*)	(*dfrA5*)	IC

Primer Probe Mix 2

FAM	TEX RED	Cy5	HEX
ESBL	ESBL	ESBL	Endogenous
(*bla*$_{CTX-M\ gr1}$)	(*bla*$_{TEM}$)	(*bla*$_{SHV}$)	IC

Primer Probe Mix 3

FAM	TEX RED	Cy5	HEX
Carbapenems	Carbapenems	Carbapenems	Endogenous
(*bla*$_{KPC}$)	(*bla*$_{NDM}$)	(*bla*$_{VIM}$)	IC

Primer Probe Mix 4

FAM	TEX RED	HEX
Carbapenems	Carbapenems	Endogenous
(*bla*$_{OXA-48}$)	(*bla*$_{IMP}$)	IC

Primer Probe Mix 5

FAM	TEX RED	Cy5	HEX
Methicillin	Vancomycin	Vancomycin	Endogenous
(*mecA*)	(*vanA*)	(*vanB*)	IC

TECHNICAL SPECIFICATIONS

- Sample Type – Blood Culture, Rectal swab, mid-stream clean catch urine or cultured isolates
- AST profiling targeting 14 genes with 5 different classes of antibiotics
- Clinical Validation – Validated on more than 500 clinical samples
- Target Regions – Pathogen specific conserved regions
- LoD Data = 10^3 Copies/reaction
- Room temperature reaction setup
- UNG is included in the master mix to avoid carry over contamination
- Reaction Volume - 20µl in each tube
- Compatible Instruments – Applied Biosystems™ 7500 series, Applied Biosystems™ QuantStudio® series, Bio-Rad CFX96, MIC PCR

CLINICAL DATA

		Reference Method		
		Positive	Negative	Total
TRUPCR Method	**Positive**	82	0	82
	Negative	1	62	63
	Total	83	62	145

Parameters	Estimate
Sensitivity	98.80%
Specificity	100.00%
Positive Predictive Value	100.00%
Negative Predictive Value	98.41%

ORDERING INFORMATION

Cat. No.	Description	Size
3B361	TRUPCR® AST Panel Kit	48 Reactions
3B362	TRUPCR® AST Panel Kit	96 Reactions