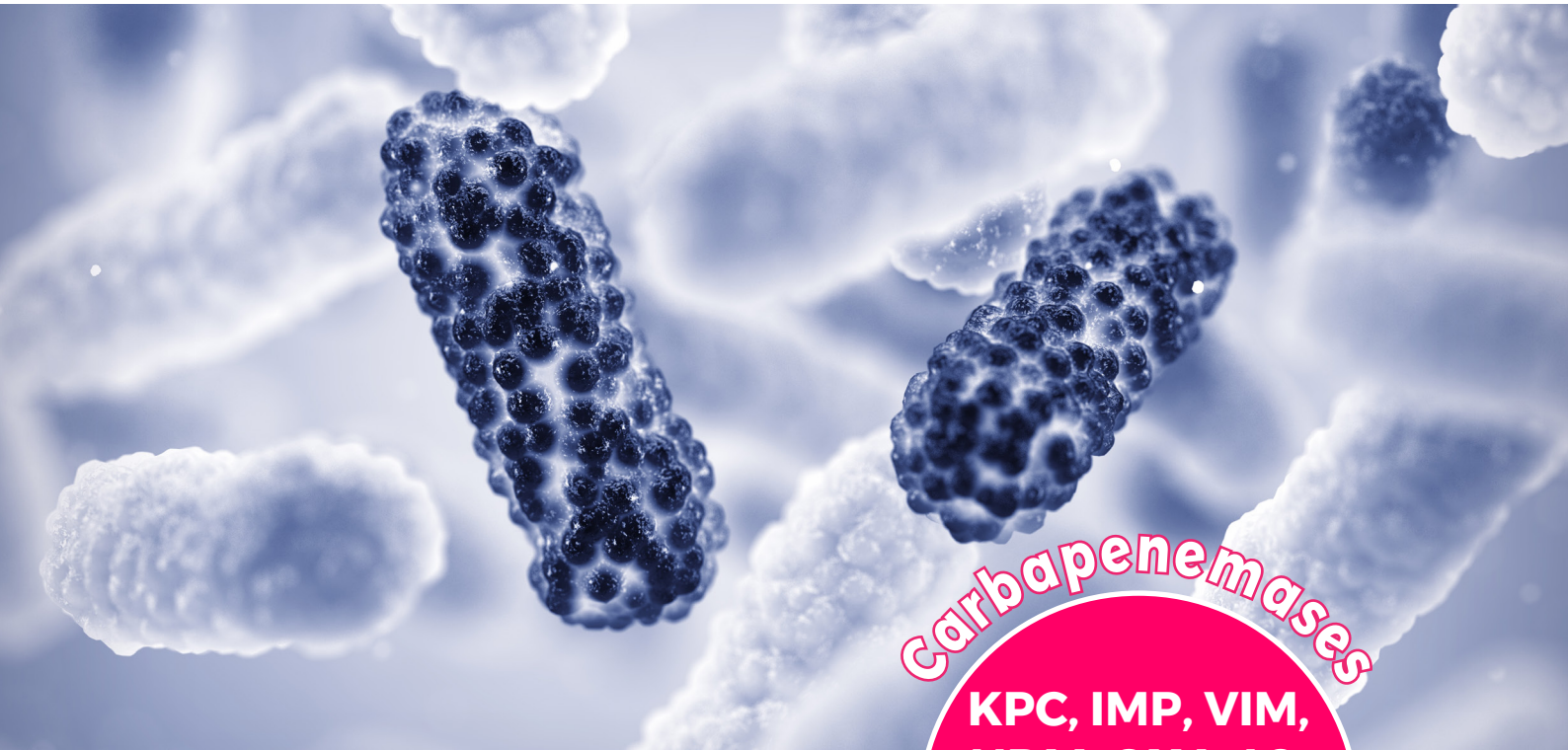


# REALQUALITY Carba-Screen

Real-Time PCR kit for the screening and identification of genes encoding Ambler class A, B and D carbapenemases responsible for carbapenem antibiotic resistance, and colistin resistance genes.



Carbapenemases

KPC, IMP, VIM,  
NDM, OXA-48,  
AcOXA

MCR1, 2 e 4

Colistin resistance

The test can be automated on the GENEQUALITY® X120 and GENEQUALITY® Max platforms which also allow sample tracking, integration with laboratory LIMS and minimal intervention by the operator.

For *in vitro* diagnostic use



**ANALITICA**  
ADVANCED BIOMEDICINE

# REALQUALITY Carba-Screen



Real-Time  
PCR



## Prompt Identification of Pathogens Carrying **Carbapenem Resistance Genes** for Effective Control and Prevention

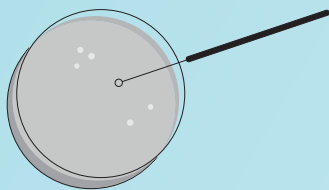
**Carbapenemases** are enzymes produced by microorganisms that can deactivate antibiotics containing a beta-lactam ring, including carbapenems, which are broad-spectrum antibiotics used as a last line of defense. Invasive infections caused by CRE (Carbapenem-resistant Enterobacterales), especially CPE (Carbapenemase-Producing Enterobacterales), have been under surveillance by the Ministry of Health since 2013, with updates as recent as December 6, 2019 (Ministerial Circular 0035470-06/12/2019-DGPRES-MDS-P of the Ministry of Health). Prompt identification of patients carrying pathogens with resistance genes is crucial for isolating them from other patients and limiting the spread of associated resistances.

## **OXA Acinetobacter**: Implications of a Carbapenem-Resistant Enemy in Clinical Settings

**OXA (Oxacillinase) Acinetobacter** refers to a specific type of beta-lactamase enzyme produced by *Acinetobacter baumannii*, a Gram-negative bacterium. These enzymes have the ability to hydrolyze certain antibiotics, including penicillins and carbapenems, making them ineffective against the bacteria. OXA-type enzymes are particularly concerning because they confer resistance to critically important carbapenem antibiotics, which are used to treat severe infections. The presence of OXA Acinetobacter strains in clinical settings poses challenges as it limits treatment options and may require alternative strategies to manage infections caused by these multidrug-resistant bacteria.

## Detecting **Colistin Resistance Genes**: Safeguarding the Efficacy of Last-Resort Antibiotics

**Colistin** is a “last-resort” antibiotic used to treat severe infections when other antibiotics fail. In recent years, genes associated with colistin resistance, known as mcr (mobile colistin resistance) genes, have been identified. These genes are carried by plasmids, making them transmissible between different bacterial species. Therefore, it is crucial to identify the potential presence of colistin resistance genes.



## REALQUALITY Carba-Screen

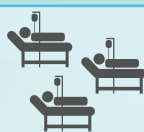


>24 hrs

Cultural analysis requires a long time for reporting.

Real-time PCR is performed on the primary sample, reducing reporting time.

3 hrs



**Ineffective isolation**

The delayed isolation of patients leads to the spread of antibiotic resistance.

Patients can be promptly isolated, reducing the spread of resistance.

**Immediate Isolation**



**Cost escalation**

Increase in the management costs of antibiotic resistance in hospital settings.

Reduction in the management costs of antibiotic resistance in hospital settings.

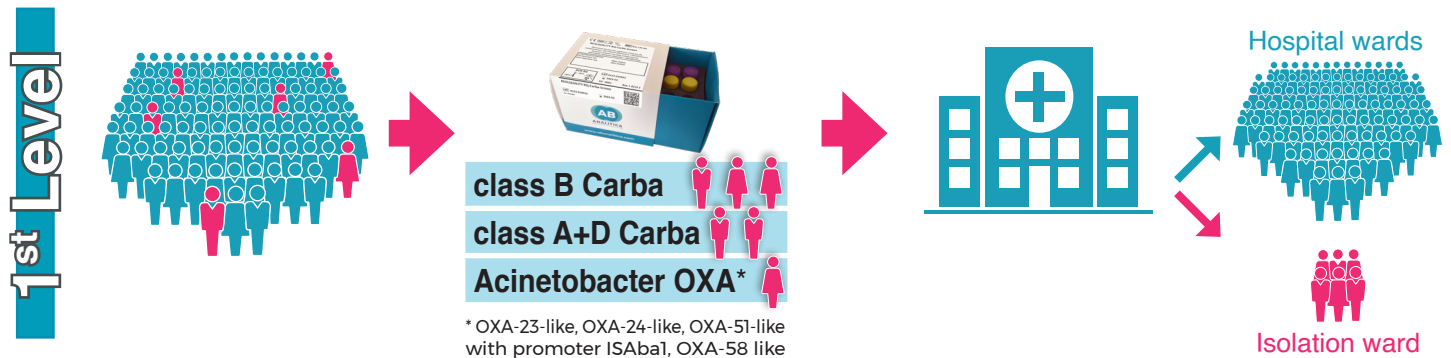
**Money Savings**



**REALQUALITY Carba-Screen** is a kit for the detection of carbapenem resistance genes at two levels of identification, and of colistin resistance. The kit can be used both for patient screening and as a confirmation molecular test following the phenotypic characterization of the pathogen responsible for the infection.

The kit includes a first **screening step** (Mix Carba-Screen) to identify the samples positive for class A, B, and D carbapenemases and for AcOXA genes, and a subsequent **step to identify resistance genes** (Mix Carba B and Mix Carba A + D) only in the samples resulted positive in the previous step.

## REALQUALITY Carba-Screen Screening



## REALQUALITY Carba-Screen Identification

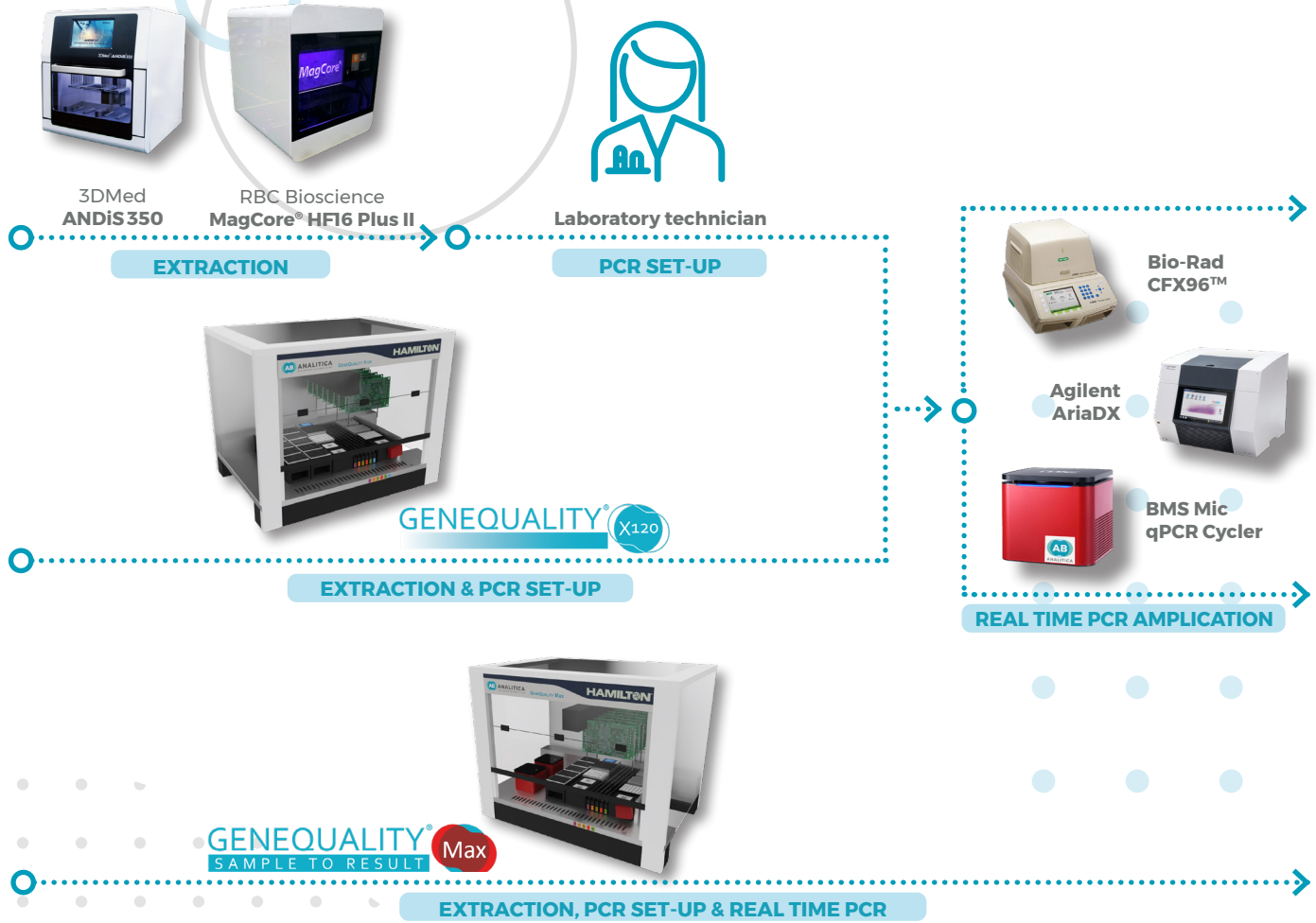


## Maximum Inclusivity

The vast spectrum of gene variants identified by RealQuality Carba-Screen ensures that no positive samples are missed.

class A Carba	KPC	78	variants	class D Carba (Acinetobacter OXA)	OXA-23-like	45	variants
class B Carba	IMP	57	variants	class D Carba (Acinetobacter OXA)	OXA-24-like	12	variants
	VIM	66	variants		OXA-51-like (with ISAbal promoter)	371	variants
	NDM	43	variants		OXA-58-like	7	variants
class D Carba	OXA-48 like	42	variants		Colistin	mcr-1	12
					mcr-2	2	variants
					mcr-4	5	variants

# Different solutions for every need



## PRODUCT CHARACTERISTICS:

- **Internal control (IC)** based on amplification of the bacterial 16S rRNA gene.
- **Positive control** included
- Includes **dUTP/UNG system** for contamination prevention.

## ORDERING INFORMATION:

CODE	VERSION	PRODUCT	DESCRIPTION	FORMAT
RQ-170-6M	C1	REALQUALITY Carba-Screen (Manual)	Screening Mix	100 tests
RQ-170-4M	C3	REALQUALITY Carba-Screen (Manual)	Identification Mix	25 +25 tests
RQ-170-6A	C1	REALQUALITY Carba-Screen (GQ X120/GQ Max)	Screening Mix	100 tests
RQ-170-4A	C3	REALQUALITY Carba-Screen (GQ X120/GQ Max)	Identification Mix	25 +25 tests

## SPECIMENS:

Validated on:

- **rectal swabs**
- **bacterial colonies**

