



Xpert®
Carba-R

Stop the Spread.

Xpert® Carba-R

Rapid molecular test to detect and differentiate genes encoding KPC, NDM, VIM, IMP, and OXA-48 carbapenemases

 **Cepheid.**
A better way.



THE NEED

- Carbapenem resistance results in increased mortality in hospitalized patients and is associated with higher total hospital costs.¹
- Organisms carrying integron and plasmid-encoded carbapenemase enzymes are largely responsible for the rapid spread of carbapenem resistance.²
- CDC recommends comprehensive infection control measures for patients who are colonized or infected with carbapenemase-producing organisms.³
- Current test methods lack the sensitivity, ease of use, and rapid results required to respond quickly to the threat of carbapenemase-producing organisms.



THE SOLUTION

Xpert® Carba-R can detect and differentiate the most prevalent carbapenemase gene families in just 48 minutes.

- Detection and differentiation of high-risk patients with Xpert Carba-R can alert clinicians and infection preventionists (IPs) rapidly to the presence of gene sequences associated with carbapenem non-susceptibility in gram-negative bacteria, including *Enterobacteriaceae*, *Pseudomonas aeruginosa*, and *Acinetobacter baumannii*.
- Rapid detection and differentiation of the bla_{KPC} , bla_{NDM} , bla_{VIM} , bla_{OXA-48} , and bla_{IMP} gene sequences from pure colonies helps clinicians optimize patient management and direct therapeutic strategy, while testing rectal and perirectal swabs helps IPs design effective infection control measures. Perirectal and rectal swabs are not intended to direct therapeutic strategy.
 - Comprehensive infection control measures should be applied to patients who are colonized or infected with carbapenemase-producing organisms.³



THE IMPACT



Carbapenemase-producing CRE are currently believed to be primarily responsible for the increasing spread of CRE in the United States and have been targeted by the CDC for aggressive prevention measures.⁴

CDC Recommended Core Measure³

Xpert® Carba-R Advantage

<p>1 Patient and Staff Cohorting</p>	<p>Cohort CRE colonized or infected patients and coordinate the staff who care for them, even if the patients are housed in single rooms. Compliance and adherence to infection prevention measures is driven by early and accurate detection of resistance. Rapid PCR testing combined with contact precautions and isolation/cohorting has demonstrated a 60% reduction in HAI acquisition.³</p>
<p>2 Contact Precautions</p>	<p>Educate, train, and monitor adherence. Consider empiric contact precautions for patients from high-risk settings that are pending results. Carbapenemase gene detection in 48 minutes enables quick action by infection prevention to reduce infection risk for vulnerable patients and help prevent outbreaks.</p>
<p>3 Use of Devices</p>	<p>Minimize the use of invasive devices. Use of invasive devices is a risk factor for the transmission of carbapenem-resistant organisms. Testing patient specimens for resistance genes, using Xpert Carba-R, prior to invasive procedures (e.g., endoscopy), can help identify carriers of carbapenemase-producing bacteria and alert medical staff to the need for additional precautions.</p>
<p>4 Timely communication from the laboratory when CRE are identified</p>	<p>Carbapenemase-producing CRE that are identified from the clinical specimens should be communicated to the IP and clinical staff within 4 to 6 hours. GeneXpert LIS connectivity and rapid testing with Xpert Carba-R can provide results to clinical staff in about an hour.</p>
<p>5 Active Surveillance Testing</p>	<p>Test high-risk patients at admission, or at admission and periodically during their facility stay for CRE. Empiric contact precautions can be considered while the results of admission surveillance testing are pending. Communicate CRE status for infected/colonized patients at discharge; transfer and identify known CRE patients at re-admission. Detection and differentiation of high-risk patients at admission with Xpert Carba-R allows detection and differentiation of the most prevalent carbapenemase gene families in just 48 minutes. Infection prevention staff could then implement precautions and reduce the risk of transmission to the most vulnerable patients.</p>
<p>6 Inter-facility communication and identification of CRE patients at admission</p>	<p>Detection and differentiation of high-risk patients at admission with Xpert Carba-R allows detection and differentiation of the most prevalent carbapenemase gene families in just 48 minutes. Infection prevention staff could then implement precautions and reduce the risk of transmission to the most vulnerable patients.</p>



PERIRECTAL AND RECTAL SWAB PERFORMANCE[^]

Target	Positive Percent Agreement	Negative Percent Agreement	Target	Positive Percent Agreement	Negative Percent Agreement
KPC	100%	100%	VIM	99.4%	100%
NDM	100%	100%	IMP	97.5%	100%
OXA-48	99.4%	100%			

[^] Xpert Carba-R vs. Reference Culture + Sequencing. Combined perirectal and rectal swab data from contrived specimens. See Product Insert (301-2438) for additional details.



WORKFLOW:

3 EASY STEPS

Total hands-on time: Seconds

1

Insert swab into Sample Reagent vial and vortex



2

Transfer the Sample Reagent to the cartridge



3

Insert cartridge and start test



➤ **Xpert® Carba-R is a qualitative, on-demand real-time PCR test for the detection and differentiation of KPC, NDM, VIM, OXA-48 and IMP in 48 minutes.**

CATALOG NUMBER

Xpert Carba-R (10 tests) GXCARBAR-10

References:

1. Judd WR, et al. Clinical and economic impact of meropenem resistance in *Pseudomonas aeruginosa*-infected patients. *American Journal of Infection Control*. June 2016. (<http://www.sciencedirect.com/science/article/pii/S0196655316303431>)
2. <https://wwwnc.cdc.gov/eid/article/17/10/pdfs/11-0655.pdf>
3. <http://www.cdc.gov/hai/pdfs/cre/CRE-guidance-508.pdf>
4. <http://www.cdc.gov/hai/organisms/cre/definition.html>

For *In Vitro* Diagnostic Use.

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