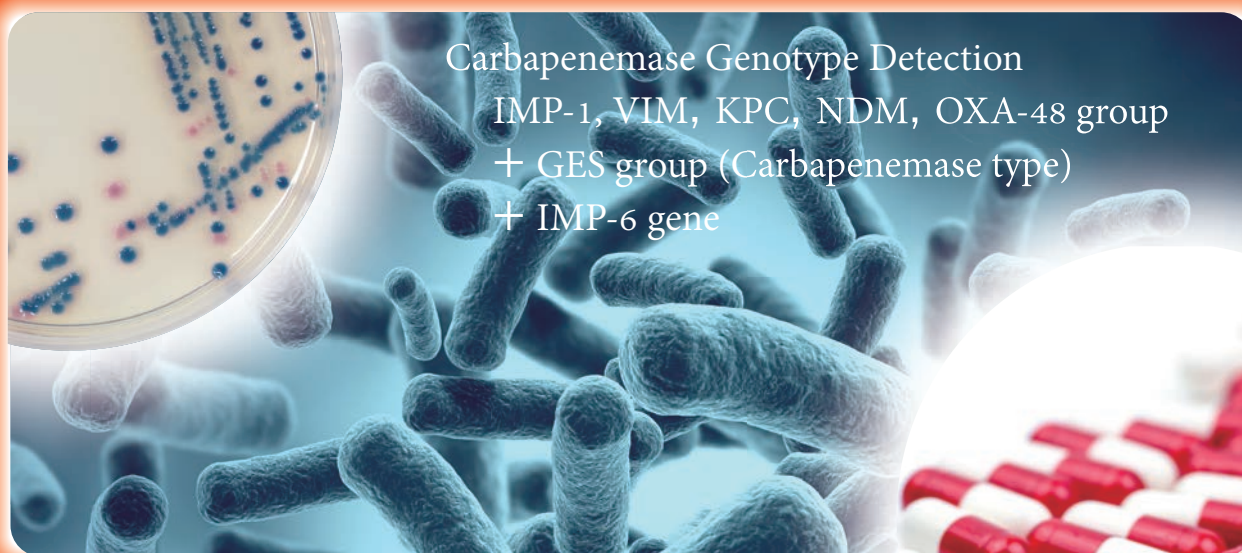


Cica Geneus[®] Carbapenemase Genotype Detection KIT2



Kanto Reagents



Carbapenemase Genotype Detection
IMP-1, VIM, KPC, NDM, OXA-48 group
+ GES group (Carbapenemase type)
+ IMP-6 gene

Carbapenem exhibits antibacterial activities and a very wide antibacterial spectrum. Recently, increasing of Carbapenem Resistant Enterobacteriaceae (CRE) becomes global problem. And stealth-type CRE, which is difficult to detect by conventional drug sensitivity test, exists in Carbapenemase Producing Enterobacteriaceae (CPE). This kit can detect 6 representative Carbapenemase genotypes and distinguish IMP-6 gene from IMP-1 group by two kinds of multiplex PCR. This kit was collaboratively developed by Prof. Dr. Sugai and Assistant Prof. Dr. Kayama at Hiroshima University.

Characteristics

- This kit can detect 6 carbapenemase genotype (IMP-1 group, VIM group, KPC group, NDM group, OXA-48 group, GES group(carbapenemase type), and distinguish IMP-6 gene from IMP-1.)
- Required time is approximately 3 hours and suitable for use in common thermal cyclers.

Composition (30 rxns)

Reagent	Volume
A AptaTaq DNA Master(5×Conc.) ^{*1}	240 μL × 1
B PCR supplement	420 μL × 1
C Primer mix α	120 μL × 1
D Primer mix β	120 μL × 1
E Positive control	100 μL × 1
F Loading buffer(6×Conc., Orange-G)	240 μL × 1

^{*1} AptaTaq DNA Master(5×Conc.) is the product of Roche Diagnostics K.K.

Work Flow

Isolate carbapenemase producing bacteria^{*2}

DNA Extraction^{*3}

Multiplex PCR

Agarose gel electrophoresis

Detection

^{*2} CHROMagar™ mSuperCARBA (72141) is recommended.

^{*3} Cica Geneus[®] DNA extraction reagent is sold separately.

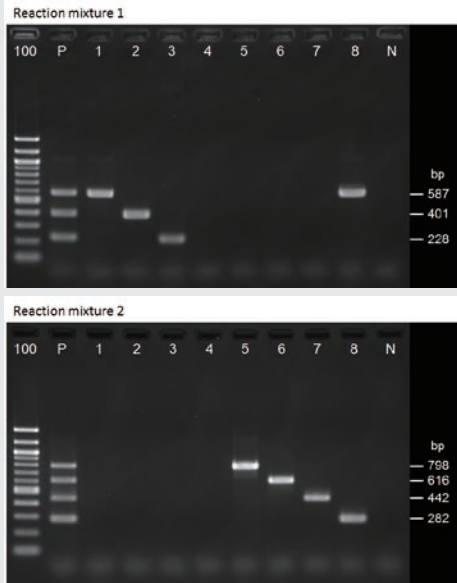


Fig.1 Example of the electrophoretic pattern
 100 : 100 bp DNA Ladder, P: Positive control (Reagent E),
 1 : IMP-1 positive bacteria, 2 : VIM positive bacteria,
 3 : GES(Carbapenemase type) positive bacteria,
 4 : GES(ESBL type) positive bacteria
 5 : KPC positive bacteria, 6 : NDM positive bacteria,
 7 : OXA-48 positive bacteria, 8 : IMP-6 positive bacteria,
 N : Negative control (TE Buffer)

Table 1 Target genes and its amplicon size

	Target gene	Amplicon size(bp)
Reaction mixture.1	<i>bla</i> _{IMP-1} group	587
	<i>bla</i> _{VIM} group	401
	<i>bla</i> _{GES(Carbapenemase) group}	228
Reaction mixture.2	<i>bla</i> _{KPC} group	798
	<i>bla</i> _{NDM} group	616
	<i>bla</i> _{OXA-48} group	442
	<i>bla</i> _{IMP-6}	282

- ① Please refer to an attached document.
 - ② From an electrophoretic pattern of two multiplex PCR (Figure. 1), you can estimate carbapenemase genotype (Table.1) in comparison with the band of the positive control.
- This kit can not identify bacterial species.
 - Even if the carbapenemase genes are detected by this kit, the strain may not be resistant to antibiotics because of the gene mutations or expression effects.
 - Some carbapenemase genes can not be detected by this kit. Additionally, even if the strain has certain target genotypes, it may be undetectable depending on subtypes.
 - In this kit, GES genes with G170N or G170S mutation are expressed as carbapenemase type GES genes, and otherwise are expressed as ESBL type GES genes.
 - Use TAE buffer for electrophoresis.
 - This kit is for research and experimental use.

Product Information

Product No.	Product Name	Package size	Stored at
08158-96	Cica Geneus [®] Carbapenemase Genotype Detection KIT2	30 rxns	-20 °C~-25 °C
08178-96	Cica Geneus [®] DNA Extraction Reagent	120 rxns	2 °C~8 °C

Multiplex PCR kit series

Product No.	Product Name	Package size	Stored at
08180-96	Cica Geneus [®] Staph POT KIT	120 rxns	-20 °C~-25 °C
08180-97		30 rxns	-20 °C~-25 °C
08187-96	Cica Geneus [®] Pseudo POT KIT	50 rxns	-20 °C~-25 °C
08062-96	Cica Geneus [®] Acineto POT KIT	30 rxns	-20 °C~-25 °C
08362-97	Cica Geneus [®] E.coli POT KIT	30 rxns	-20 °C~-25 °C
08112-96	Cica Geneus [®] ESBL Genotype Detection KIT	30 rxns	-20 °C~-25 °C
08143-96	Cica Geneus [®] AmpC Genotype Detection KIT	30 rxns	-20 °C~-25 °C

Related reagent

Product No.	Product Name	Package size
72141	CHROMagar [™] mSuperCARBA (prepared)	10 sheets
46509-79	10XTAE buffer	1 L
14575-43	Ethidium bromide solution	10 mL
01098-23	Agarose KANTO LE	100 g
01016-96	AptaTaq DNA Master(5×Conc.)	500 μL

- This product is developed with Hiroshima University.



Please access [Cica-web](#) to catch the detail of our reagent information !

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