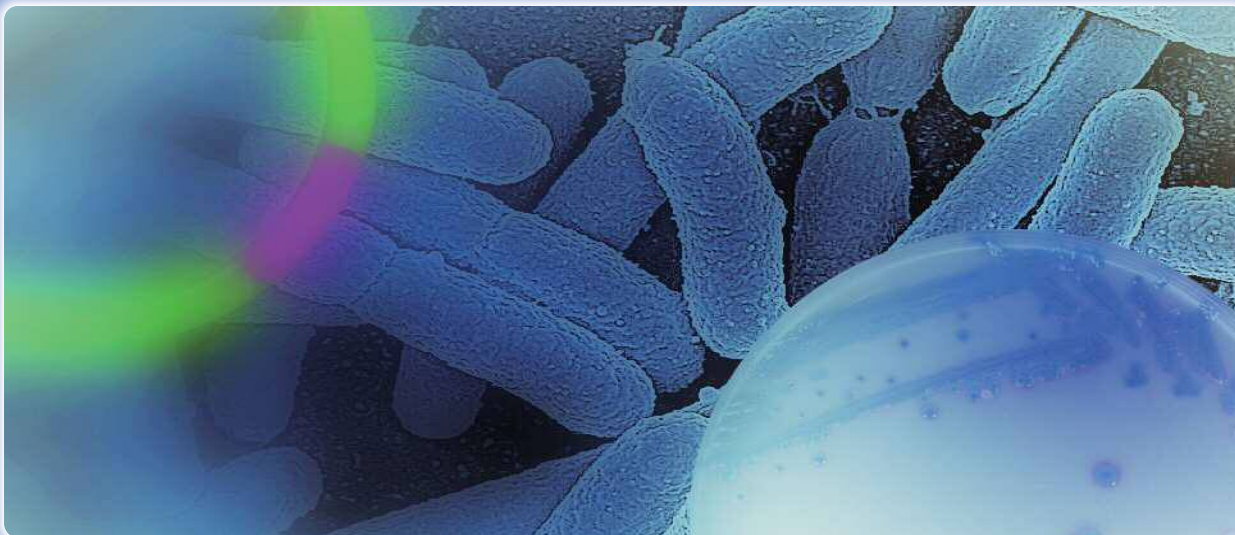


# Cica Geneus<sup>®</sup> ESBL Genotype Detection KIT



Kanto Reagents



Extended Spectrum  $\beta$ -Lactamase :ESBL is an enzyme hydrolyzes wide  $\beta$ -lactam antibiotics such as penicillin, cephem, monobactam and so on.

Recently, an increase of ESBL producing bacteria has become a big problem and requires to infection control.

Cica Geneus<sup>®</sup> ESBL Genotype Detection KIT can detect 6 representative ESBL genotypes 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 ESBL genotype (TEM group, SHV group, CTX-M-1 group, CTX-M-2 group, CTX-M-8 group, and CTX-M-9 group)
- Required time is approximately 3 hours.
- Suitable for use in common thermal cyclers.

## Composition(30 rxns)

| Reagent                                     | Volume        |
|---|---------------|
| A AptaTaq DNA Master(5×Conc.) <sup>*1</sup> | 240 $\mu$ L×1 |
| B PCR supplement                            | 240 $\mu$ L×1 |
| C Primer mix $\alpha$                       | 120 $\mu$ L×1 |
| D Primer mix $\beta$                        | 120 $\mu$ L×1 |
| E Positive control                          | 240 $\mu$ L×1 |
| F Loading buffer(6×Conc., Orange-G)         | 240 $\mu$ L×1 |

<sup>\*1</sup> AptaTaq DNA Master(5×Conc.) is the product of Roche Diagnostics K.K.

## Work Flow

Isolate ESBL producing bacteria<sup>\*2</sup>

DNA Extraction<sup>\*3</sup>

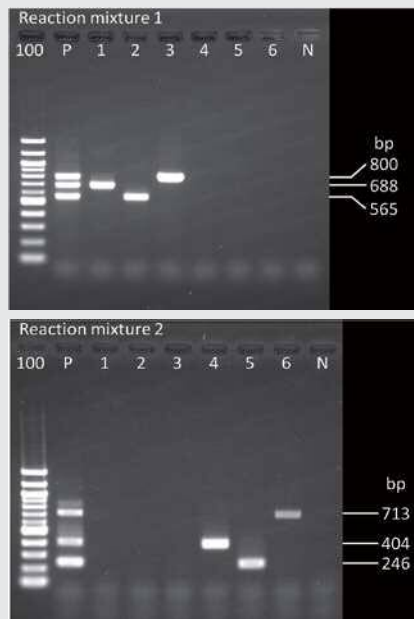
Multiplex PCR

Agarose gel electrophoresis

Detection

<sup>\*2</sup> CHROMagar<sup>™</sup> ESBL (72101) is recommended.

<sup>\*3</sup> Cica Geneus<sup>®</sup> DNA extraction reagent is sold separately.



**Fig.1 Example of the electrophoretic pattern**

100 : 100 bp DNA Ladder, PC: Positive control (Reagent E),  
 1 : CTX-M-1 positive bacteria, 2 : CTX-M-9 positive bacteria,  
 3 : TEM positive bacteria, 4 : CTX-M-2 positive bacteria  
 5 : CTX-M-8 positive bacteria, 6 : SHV 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> <sub>TEM</sub>           | 800               |
|                    | <i>bla</i> <sub>CTX-M-1 group</sub> | 688               |
|                    | <i>bla</i> <sub>CTX-M-9 group</sub> | 565               |
| Reaction mixture.2 | <i>bla</i> <sub>SHV</sub>           | 713               |
|                    | <i>bla</i> <sub>CTX-M-2 group</sub> | 404               |
|                    | <i>bla</i> <sub>CTX-M-8 group</sub> | 246               |

- ① Please refer to an attached document.
- ② From an electrophoretic pattern of two multiplex PCR (Figure. 1), you can estimate ESBL genotype (Table.1) in comparison with the band of the positive control.

- This kit can not identify bacterial species.
- Some strains may possess some types of ESBL genes.
- This kit can detect representative ESBL genes, but some ESBL genes can not be detected. (Genes not in 6 ESBL genotype group and some subtypes)
- Sometimes genotype test results may differ from drug sensitivity test results.
- This kit is for research and experimental use.

## ● Product Information

| Product No. | Product Name   | Package size | Stored at     |
|-------------|--|--------------|---------------|
| 08112-96    | Cica Geneus <sup>®</sup> ESBL Genotype Detection KIT | 30 rxns      | -20 °C~-25 °C |
| 08178-96    | Cica Geneus <sup>®</sup> 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 <sup>®</sup> Staph POT KIT   | 120 rxns     | -20 °C~-25 °C |
| 08180-97    |  | 30 rxns      | -20 °C~-25 °C |
| 08187-96    | Cica Geneus <sup>®</sup> Pseudo POT KIT  | 50 rxns      | -20 °C~-25 °C |
| 08062-96    | Cica Geneus <sup>®</sup> Acineto POT KIT   | 30 rxns      | -20 °C~-25 °C |
| 08362-97    | Cica Geneus <sup>®</sup> E.coli POT KIT  | 30 rxns      | -20 °C~-25 °C |
| -           | Cica Geneus <sup>®</sup> Improved Carbapenemase Genotype Detection KIT (tentative) | 30 rxns      | -20 °C~-25 °C |

## ● Related reagent

| Product No. | Product Name                | Package size |
|-------------|-----------------------------|--------------|
| 72101       | CHROMagar™ ESBL (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(5xConc.) | 500 μL       |



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

- This product is developed with Hiroshima University.



**KANTO CHEMICAL CO., INC.**  
**REAGENT DIVISION**

East Muromachi Mitsui BLDG, 2-1, Nihonbashi Muromachi 2-chome,  
 Chuo-ku, Tokyo, 103-0022, JAPAN

Telephone +81-3-6214-1092

Telefax +81-3-3241-1053

http://www.kanto.co.jp

E-mail: kanto-61@gms.kanto.co.jp