FastGene®

Restriction Enzyme Tth111 I

Cat.#	Size	Conc.
FG-Tth111I	400 units	5 units/µl

Store at -20℃

Supplied with:
10X FastGene® Buffer IV (FG-REB4)
10X FastGene® FastCut Buffer (FG-REBHF)
6X DNA Loading Buffer
Sterile water

Recognition site

For Research Use Only. Not for use in diagnostic procedures.

ISO9001

Source: *Thermus thermophilus 111*

Reaction conditions
1X FastGene® Buffer IV 65℃
1X FastGene® FastCut Buffer, 65℃

FastGene® FastCut Buffer
FastGene® restriction enzyme can cut substrate DNA in 5-15 with FastGene® FastCut Buffer.

1X FastGene® Buffer IV
20 mM Tris-acetate (pH 7.9 at 25℃)
50 mM potassium acetate
10 mM magnesium acetate
100 µg/ml BSA

Unit definition
One unit is defined as the amount of enzyme required for complete digestion of 1 µg bacteriophage λ (Hind III digestion) at 65℃ for 1 hr in 50 µl reaction mixtures.

Quality control
- Unit definition assay
- Overdigestion assay
- Endonuclease assay
- Extreme pure assay

Dilution buffer: FastGene® Diluent B
10 mM Tris-HCl (pH 7.4 at 25℃), 300 mM NaCl, 0.1 mM EDTA, 1 mM dithiothreitol, 500 µg/ml BSA, 50% glycerol.

Heat Inactivation
No.

Methylation sensitivity
dam methylation: Not sensitive
dcm methylation: Not sensitive
CpG methylation: Not sensitive

Prolonged incubation
A minimum amount of enzyme required to digest 1 µg substrate DNA for 16 hr; 0.25 U.

Relative activity in FastGene® Buffers

FastGene® Buffer I:	25%
FastGene® Buffer II:	100%
FastGene® Buffer III:	100%
FastGene® Buffer IV:	100%
FastGene® FastCut Buffer:	100%

Note
It produces a 5' extension of one nucleotide, which is more difficult to be ligated than blunt-ends. It is not affected by *dam*, *dcm*, or mammalian CpG methylation. Incubation at 37℃ results in only 10% activity. Reaction condition of low salt, excess enzyme, excess glycerol (>5%) or high pH (>8.0) may result in star activity. PflF I (an isoschizomer of Tth111 I) does not exhibit star activity.

Standard reaction condition
- Normal protocol

Component	Final Conc.	Volume
Substrate DNA	1 µg	X µl
10X FastGene® Buffer IV	1 X	5 µl
Tth111 I	5 unit	1 µl
Sterile water		up to 50 µl

→ Incubate at 65℃ for 1 hr

- Fast protocol

Component	Final Conc.	Volume
Substrate DNA	1 µg	X µl
10X FastGene® FastCut Buffer	1 X	5 µl
Tth111 I	5 unit	1 µl
Sterile water		up to 50 µl

→ Incubate at 65℃ for 15 min

※ We recommend 5-10 units of enzyme per µg DNA and 10-20 units for genomic DNA in a 1 h digest.