



## Restriction Enzyme Tth111 I



Cat.#	Size	Conc.
FG-Tth111	400 units	5 units/μl
Store at -20°C		

**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°C  
1X FastGene® FastCut Buffer, 65°C

### 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°C)  
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°C 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°C), 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°C 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°C 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°C 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.



## Restriction Enzyme Tth111 I



Cat.#	Size	Conc.
FG-Tth111	400 units	5 units/μl
Store at -20°C		

**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°C  
1X FastGene® FastCut Buffer, 65°C

### 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°C)  
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°C 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°C), 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°C 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°C 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°C 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.