FastGene®

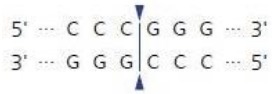
Restriction Enzyme Sma I

Cat.#	Size	Conc.
FG-SmaI	2,000 units	20 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: *Serratia marcescens*

Reaction conditions
1X FastGene® Buffer IV, 25℃
1X FastGene® FastCut Buffer, 25℃

FastGene® FastCut Buffer
FastGene® restriction enzyme can cut substrate DNA in 5-15 min 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 25℃ for 1 hr in 50 µl reaction mixtures.

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

Dilution buffer
FastGene® Diluent A

Heat Inactivation
Sma I can be inactivated at 65℃ for 20 min.

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

Prolonged incubation
A minimum amount of enzyme required to digest 1 µg substrate DNA for 16 hr; 0.13 U.

Relative activity in FastGene® Buffers
FastGene® Buffer I: 0%
FastGene® Buffer II: 0%
FastGene® Buffer III: 0%
FastGene® Buffer IV: 100%
FastGene® FastCut Buffer: 100%

Note
It is an isoschizomer of Xma I. It produces a blunt end, whereas Xma I produces a 5' extension. Cleavage of mammalian genomic DNA is blocked by CpG methylation. Since its half-life is 15 min at 37℃, larger amounts of the enzyme are recommended for complete digestion. It is sensitive to impure DNA.

Standard reaction condition

- Normal protocol

Component	Final Conc.	Volume
Substrate DNA	1 µg	X µl
10X FastGene® Buffer IV	1 X	5 µl
Sma I	20 unit	1 µl
Sterile water		up to 50 µl

→ Incubate at 37℃ for 1 hr

- Fast protocol

Component	Final Conc.	Volume
Substrate DNA	1 µg	X µl
10X FastGene® FastCut Buffer	2 X	10 µl
Sma I	20 unit	1 µl
Sterile water		up to 50 µl

→ Incubate at 37℃ 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.