



Restriction Enzyme

Sma I



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

Reaction conditions

1X FastGene® Buffer IV, 25°C
1X FastGene® FastCut Buffer, 25°C

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°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 25°C for 1 hr in 50 μl reaction mixtures.

Quality control

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

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°C 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°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.

Dilution buffer

FastGene® Diluent A

Heat Inactivation

Sma I can be inactivated at 65°C 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°C, larger amounts of the enzyme are recommended for complete digestion. It is sensitive to impure DNA.