



# Restriction Enzyme

## Sac II

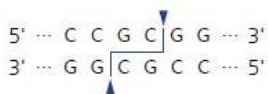


**Cat.#** FG-SacII  
**Size** 2,000 units  
**Conc.** 20 units/μl

**Store at -20°C**

**Supplied with:** 10X FastGene® 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.*



**Source:** *Streptomyces achromogenes*

### Reaction conditions

1X FastGene® Buffer IV 37°C  
1X FastGene® FastCut Buffer, 37°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 37°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
Sac II	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	1 X	5 μl
Sac II	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

Sac II 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: 50%  
FastGene® Buffer II: 100%  
FastGene® Buffer III: 50%  
FastGene® Buffer IV: 100%  
FastGene® FastCut Buffer: 100%

### Note

Cleavage of mammalian genomic DNA is blocked by CpG methylation. It shows site preference. It is sensitive to impure DNA. It needs at least 3 bases on each side of the recognition site for >90% digestion after 20 hr incubation.