



Restriction Enzyme

Acu I



Cat.# FG-AcuI	Size 300 units	Conc. 5 units/μl
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Store at -20°C

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

Recognition site



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



Dilution buffer

FastGene® Diluent B

Heat Inactivation

Acu I can be inactivated at 65°C for 20 min.

Methylation sensitivity

dam methylation: Not sensitive
dcm methylation: Not sensitive
CpG methylation: Not sensitive

Relative activity in FastGene® Buffers

FastGene® Buffer I:	50%
FastGene® Buffer II:	50%
FastGene® Buffer III:	75%
FastGene® Buffer IV:	100%
FastGene® FastCut Buffer:	100%

Note

Acu I requires S-adenosylmethionine (SAM) for optimal activity. SAM (in 0.005 M sulfuric acid and 10% Ethanol) stored at -20°C is stable for at least 6 months. Reaction condition with excess enzyme, excess glycerol (>5%) or longterm incubation may result in star activity.

Source

Acinetobacter calcoaceticus

Reaction conditions at 37°C

1X FastGene® Buffer IV, 40 μM S-adenosylmethionine(SAM),
1X FastGene® FastCut Buffer, 40 μM S-adenosylmethionine(SAM),

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 to digest 1 μg of Lambda DNA in 1 hour at 37°C in a total reaction volume of 50 μl.

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
S-adenosylmethionine	40 μM	1 μl
Acu I	5 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
S-adenosylmethionine	40 μM	1 μl
Acu I	5 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.