FuniCut™ PvuI

Product description

The FuniCut™ series of restriction endonucleases are rapidly acting, genetically engineered enzymes capable of precisely cutting DNA within 5 to 15 minutes. They are ideal for the rapid digestion of plasmid DNA, PCR products, genomic DNA, and more. The FuniCut™ series shares a universal digestion buffer, simplifying the reaction setup, and offers excellent enzyme activity redundancy, making it easy to handle substrate excess or challenging templates.

Specifications

Cat NO.	15069ES30
Size	30 T
Recognition Site	5'-CG AT↓CG-3' 3'-GC↑TAGC-5'
Recommended Reaction Conditions	1× FuniCut™ Buffer; incubate at 37°C.
Enzyme Activity	20 U/μL
Inactivation Conditions	Incubate at 80°C for 20 minutes.
Isoschizomers	Ple19I

Components

Components No.	Name	15069ES30
15069-A	FuniCut™ PvuI	30 μL
15069-B	10×FuniCut™ Buffer	1 mL
15069-C	10×FuniCut™ Color Buffer*	1 mL

[Note]: 10×FuniCut™ Color Buffer includes red and yellow tracking dyes, allowing direct loading onto agarose gels for electrophoresis. The red dye migrates similarly to a 2500 bp double-stranded DNA fragment in 1% agarose gel, while the yellow dye migrates similarly to a 10 bp double-stranded DNA fragment.

Storage

This product should be stored at -25~-15°C for 2 years.

Notes

1. No star activity observed after a 3-hour incubation; however, prolonged digestion may lead to star activity.
2. This product is for research use only.
3. For safety, please wear lab coat and disposable gloves during operation.

Instructions

1. Rapid DNA Digestion Protocol

1) Prepare the reaction mixture as follows (operate on ice):

Component	Plasmid DNA	PCR Products	Genomic DNA
ddH_2O	15 μL	16 μL	30 μL
10×FuniCut™ Buffer or 10×FuniCut™ Color Buffer	2 μL	3 μL*	5 μL
Substrate DNA	2 μL (~1 μg)	10 μL (~0.2 μg)	10 μL (5 μg)
FuniCut™ PvuI	1 μL	1 μL	5 μL
Total	20 μL	30 μL	50 μL

[Note]:*For purified PCR products; unpurified PCR products may require adjustment of buffer amount.

2) Gently mix by pipetting or flicking the tube wall (avoid vortexing), then briefly centrifuge to collect droplets.

3) Incubate at 37°C for 15 min (plasmid), 15-30 min (PCR products), or 30-60 min (genomic DNA).

4) Optionally, inactivate the enzyme by incubating at 80°C for 20 minutes.

5) If using FuniCut™ Color Buffer for the reaction, the resulting product can be directly loaded for electrophoresis.

2. Double or Multiple Digestions

1) Use 1 μL of each enzyme, adjusting the total reaction volume accordingly.

2) The total volume of all enzymes should not exceed 1/10th of the total reaction volume.

3) If using enzymes with different optimal temperatures, start with the lower temperature enzyme before adding the higher temperature one, and incubate at the higher temperature.

3. Scaling Up Plasmid Reactions

Component	Volume (20 μL)	Volume (20 μL)	Volume (50 μL)*
DNA	1 μg	2 μg	5 μg
10×FuniCut™ Buffer or 10×FuniCut™ Color Buffer	2 μL	2 μL	5 μL
FuniCut™ PvuI	1 μL	2 μL	5 μL
Total	20 μL	20 μL	50 μL

[Note]:*If the total reaction volume exceeds 20 μL, consider using a water bath, metal bath, or sand bath, with extended incubation time.

4. Number of Recognition Sites in Different DNAs

λDNA	ΦX174	pBR322	pUC57	pUC18/19	SV40	M13mp18/19	Adeno2
3	0	1	2	2	0	1	7

5. Methylation Sensitivity

Dam	Dcm	CpG	EcoKI	EcoBI
No effect	No effect	Cleavage may be blocked	No effect	No effect

6. Enzyme Activity in Different Buffers*

Reaction Buffer	FuniCut™ Buffer	Thermo Scientific FastDigest Buffer	NEB CutSmart™ Buffer	Takara QuickCut™ Buffer
Activity	100%	100%	100%	100%

[Note]:*Activity data obtained from standard reaction conditions according to Yisheng Bio's testing protocols.