FuniCut™ NcoI

Product description

The FuniCut™ series of restriction endonucleases are rapid restriction enzymes produced through genetic engineering recombinant technology, capable of precisely completing DNA cleavage within 5 to 15 minutes. They are suitable for the rapid digestion of plasmid DNA, PCR products, genomic DNA, and more. The FuniCut™ series of rapid restriction enzymes share a common digestion buffer, simplifying the reaction system. Additionally, they exhibit excellent enzyme activity redundancy, easily handling substrate excess or challenging templates.

Specifications

Cat NO.	15018ES30
Size	30 T
Recognition Site	5'-C↓CATGG-3' 3'-GGTAC↑C-5'
Recommended Reaction Conditions	1xFuniCut™ Buffer; optimal at 37°C incubation
Enzyme Activity	20 U/μL
Inactivation Conditions	Incubate at 80°C for 20 minutes
Isoschizomers	Bsp191

Components

Components No.	Name	15018ES30
15018-A	FuniCut™ NcoI	30 μL
15018-B	10 x FuniCut™ Buffer	1 mL
15018-C	10 x FuniCut™ Color Buffer*	1 mL

[Note]: *10 x FuniCut™ Color Buffer includes red and yellow tracking dyes, allowing direct use of the product for gel electrophoresis. The red dye migrates similarly to a 2500 bp double-stranded DNA fragment in 1% agarose gel; the yellow dye migrates similarly to a 10 bp double-stranded DNA fragment in 1% agarose gel.

Storage

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

Notes

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

Instructions

1. Rapid DNA Digestion Procedure

1) Prepare the reaction mixture following the suggested order of addition (operate on ice)

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

[Note]:*This system refers to purified PCR products. Unpurified PCR products possess certain ionic strength, thus the volume of 10xFuniCut™ Buffer can be reduced to 2μL accordingly. If proceeding with cloning experiments, purify PCR products before digestion.

2) Gently mix by pipetting or flicking the tube wall (do not vortex), then briefly centrifuge to collect droplets from the tube walls.

3) Incubate at 37°C for 15 minutes (plasmids), or 15 to 30 minutes (PCR products), or 30 to 60 minutes (genomic DNA).

4) Inactivate the enzyme by incubating at 80°C for 20 minutes to stop the reaction (optional).

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

2. Double or Multiple Digests

1) Use 1 μL of each endonuclease, appropriately increasing the reaction volume as needed.

2) The total volume of all enzymes should not exceed one-tenth of the total reaction volume.

3) If the optimal reaction temperatures for the selected enzymes differ, start digestion with the lower temperature enzyme first, then add the higher temperature enzyme, incubating at the higher temperature thereafter.

3. Scaling Up Plasmid Reactions

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

[Note]:*For total reaction volumes greater than 20 μL, water baths, metal baths, or sand baths can be used, along with increased incubation times.

4. Recognition Sites in Different DNAs

λDNA	ΦX174	pBR322	pUC57	pUC18/19	SV40	M13mp18/19	Adeno2
4	0	0	0	0	3	0	20

5. Methylation Effects

Dam	Dcm	CpG	EcoKI	EcoBI
No effect	No effect	No effect	No effect	No effect

6. Activity in Different Reaction Buffers*

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

[Note]:*Activity data derived from standard reaction system tests conducted by Yeasen.