



Product Information & Manual

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Exonuclease V (RecBCD)

Cat. no. LDG0041RG

Product Overview

Package Components

Specification	Item	Quantity
5000 U	Exonuclease V (RecBCD) (20 U/μL)	1 vial (250 μL)
	10X Reaction buffer	1 vial (1 mL)
	10 mM ATP	1 vial (1 mL)

Description

Exonuclease V (RecBCD) is a highly processive, ATP-dependent recombinant enzyme complex from *Escherichia coli* that possesses dual helicase and exonuclease activities. Driven by ATP hydrolysis, it rapidly degrades linear single- and double-stranded DNA from both 5' and 3' termini into short, acid-soluble oligonucleotides. With strict specificity for free ends, the enzyme degrades linear DNA while generally preserving nicked and supercoiled plasmid DNA. This unique substrate discrimination makes Exonuclease V an essential tool for eliminating contaminating linear genomic DNA to yield high-purity circular DNA for sensitive downstream applications.

Source

Escherichia coli

Unit Definition

One unit of Exonuclease V digests 0.33 μg of linear double-stranded DNA into acid-soluble nucleotides in 30 minutes at 37°C under standard assay conditions.

Storage Buffer

The enzyme is supplied in 50 mM Tris-HCl, 100 mM NaCl, 1 mM DTT, 0.1 mM EDTA, 0.1% Triton X-100, 50% glycerol, pH 7.5.

10X Reaction Buffer

200 mM Tris, 500 mM potassium acetate, 100 mM magnesium acetate, 10 mM DTT, pH 7.9.

Procedure

1. Prepare a reaction according to the table below:

Components	Amount
DNA	2 μg
10X Reaction buffer	2 μL
10 mM ATP	2 μL
Exonuclease V	1 μL
Sterile nuclease-free water	To 20 μL

Note:

- (1) Mix gently and spin down briefly prior to incubation.
- (2) If the DNA volume exceeds the reaction limit due to low concentration, scale up all components proportionally.
2. Incubate the reaction mixture at 37°C for 30 minutes.
3. Stop the reaction by adding EDTA to a final concentration of 25 mM (e.g. add 1 μL of 0.5 M EDTA (pH 8.0) to the 20 μL reaction mixture) or inactivate the enzyme by heating at 70°C for 30 minutes.

4. Analyze the extent of sample digestion using electrophoresis.

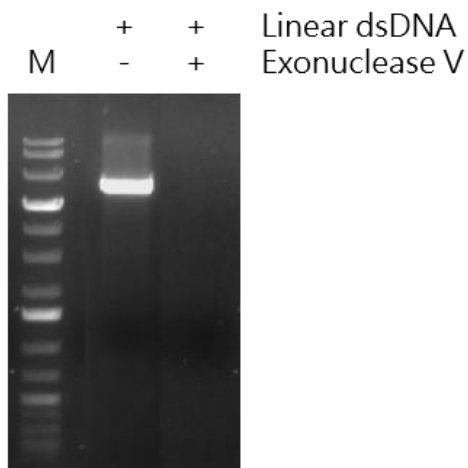


Figure. Agarose gel electrophoresis of DNA digested with Exonuclease V. The standard assay was performed by incubating 1 unit of Exonuclease V and 0.33 μ g of linear dsDNA at 37°C for 30 minutes.

Storage and Stability

This product is stable at -20°C for 12 months under sterile conditions. Avoid repeated freeze-thaw cycles.

Disclaimer

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