



Lambda Exonuclease

(recombinant protein)

Cat. No.	size
E1180-01	1 000 units
E1180-02	5 000 units

Unit Definition:

One unit of Lambda Exonuclease produces 10 nmoles of acid-soluble deoxyribonucleotide from double-stranded DNA in 30 min at 37°C.

Storage Conditions:

Store at -20°C.

Package Contents:

- Lambda Exonuclease
- 10 x Lambda Exonuclease Buffer
- BSA [100 x], 2.5 mg/ml (added as separate component to prevent reaction buffer precipitation).

References:

1. Little, John W. (1981) *Gene Amplification and Analysis* 2, 135-145.

Double-stranded specific DNase produced by *Escherichia coli* upon lambda bacteriophage infection that digests one DNA strand starting from 5' terminus.

Description:

- Double-stranded specific DNase that requires the presence of a 5'-phosphate group for activity.
- PCR products prepared using one PCR primer phosphorylated at the 5'-end and the other primer unphosphorylated can be treated with Lambda Exonuclease to yield a single-stranded DNA. That helps to obtain a clean readable sequence without the extraneous bands which are often present when PCR products are sequenced directly.
- DNA digestion with Lambda Exonuclease is especially helpful when sequencing PCR products with a high GC content.

Assay Conditions:

67 mM Glycine-KOH (pH 9.5 at 25°C), 10 mM β-mercaptoethanol, 6.7 mM MgCl₂, 25 μg/ml bovine serum albumin, 20 μg/ml sonicated [³H]-labeled Lambda DNA and Lambda Exonuclease in 50 μl for 30 min at 37°C.

10 x Reaction Buffer:

670 mM Glycine-KOH (pH 9.5 at 25°C), 100 mM β-mercaptoethanol, 67 mM MgCl₂.

Quality Control:

All preparations are assayed for contaminating nonspecific endodeoxyribonuclease and 3' exodeoxyribonuclease activities. Tested for the presence of linear DNA.

Lambda Exonuclease Digestion Protocol:

1. Mix:

Component:	Amount:
DNA	x μl (0.1 - 1 μg)
10 x Lambda Exonuclease Buffer	5 μl
100 x BSA	0.5 μl
Lambda Exonuclease	5 U
Nuclease-free Water	to 50 μl

2. Incubate for 15–30 min at 37°C.
3. Heat-inactivate (10 min, 75°C) or purify DNA by spin column purification (e.g. EURx PCR/DNA Clean-Up Purification Kit, Cat. No. E3520) or collect ssDNA by Ethanol Precipitation.

For unambiguous PCR Sequencing:

1. Digest purified DNA with Recombinant Lambda Exonuclease.
2. Heat to inactivate enzyme ready for DNA sequencing.

This product is developed, designed and sold exclusively for research purposes and in vitro use only.

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