Thermo SCIENTIFIC

PRODUCT INFORMATION

Lambda Exonuclease

Pub. No. MAN0012006
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Lot: _ **Expiry Date: _**

Components	#EN0561 1000 U	#EN0562 5000 U
Concentration	10 U/µL	10 U/µL
10X Reaction Buffer	1 mL	5 x 1 mL

Store at -20 °C

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

Description

Lambda Exonuclease is a highly processive 5'→3' exodeoxyribonuclease. It selectively digests the 5'-phosphorylated strand of double-stranded DNA. The enzyme exhibits low activity on single-stranded DNA and non-phosphorylated DNA, and has no activity at nicks and limited activity at gaps in DNA (1, 2).

Applications

- Generating single-stranded PCR products for use in:
  - DNA sequencing (3);
  - analysis of DNA single-strand conformation polymorphism (SSCP) (4);
  - rolling circle amplification.
- Producing single-stranded DNA from double-stranded DNA fragments.
- Cloning of PCR products (5).

Source

E.coli cells with a cloned *exo* gene of phage lambda.

Definition of Activity Unit

One unit of the enzyme catalyzes the release of 10 nmol of acid soluble reaction products from double-stranded substrate in 30 min at 37 °C.

Storage Buffer

The enzyme is supplied in: 25 mM Tris-HCl (pH 8.0), 0.1 mM EDTA, 1 mM DTT, 50 mM NaCl, 0.1% (v/v) Triton X-100 and 50% (v/v) glycerol.

10X Reaction Buffer

670 mM glycine-KOH (pH 9.4), 25 mM $MgCl_2$, 0.1% (v/v) Triton X-100.

Inhibition and Inactivation

- Inhibitors: salt at relatively low concentration (0.2 M KCl, 0.1 M NaCl), p-chloromercuribenzoate.
- Inactivated by heating at 80 °C for 15 min.

Reaction Conditions (5)

For 50 µL reaction mixture:

10X Reaction Buffer	5 µL
DNA	2 µg
Lambda Exonuclease	10 U

Incubate at 37 °C for 1 to 30 min, depending upon extent of digestion required. Stop reaction by the addition 2 µL of 0.5 M EDTA or by heating at 80 °C for 10 min.

CERTIFICATE OF ANALYSIS

Endodeoxyribonuclease Assay

Incubation of supercoiled plasmid DNA with enzyme.

Functional Assay

Lambda Exonuclease was tested in generation of single-stranded DNA from a PCR product prepared using two primers one of which was 5'-phosphorylated.

Quality authorized by:  Jurgita Zilinskiene

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References

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3. Higuchi, R.G., Ochman, H., Production of single-stranded DNA templates by exonuclease digestion following the polymerase chain reaction, Nucleic Acids Res., 17, 5865, 1989.
4. Schwieger, F., Tebbe, C.C., A new approach to utilize PCR-single-stranded-conformation polymorphism for 16S rRNA gene-based microbial community analysis, Appl. Environ. Microbiol. 64, 4870-4876, 1998.
5. Tseng, H., DNA cloning without restriction enzyme and ligase, Biotechniques. 27, 1240-1244, 1999.

PRODUCT USE LIMITATION

This product is developed, designed and sold exclusively *for research purposes and in vitro use only.* The product was not tested for use in diagnostics or for drug development, nor is it suitable for administration to humans or animals.
Please refer to www.thermofisher.com for Material Safety Data Sheet of the product.