Exonuclease III

A 3'->5' exonuclease, releasing 5'-mononucleotides from the 3'-ends of DNA strands

Product Information

Name:	**Exonuclease III** (*Escherichia coli*)	
Catalog #:	BL962A	25 000 units
	BL962B	125 000 units
Unit Definition #:	One unit is defined as the amount of enzyme required to produce 1 nmol of acid-soluble radio-activity in 30 min at 37°C.	
Storage:	dry at –20°C	

Technical information

- The 3'→5' exonuclease is specific towards double-stranded DNA.
- Contains DNA 3'-phosphatase, hydrolyzing 3'-terminal phosphomonoesters.
- Contains AP endonuclease, cleaving phosphodiester bonds at apurinic or apyrimidinic sites to produce 5'-termini that are basefree deoxyribose 5'-phosphate residues.
- The enzyme has ribonuclease H activity, preferentially degrading the RNA strand in a DNA-RNA hybrid duplex, presumably exonucleolytically.
- Exonuclease III digests duplex DNA at nicks producing singlestranded gaps.
- Will not degrade double-stranded DNA with 3. overhang of at least 4 base pairs, single-stranded DNA or phosphorothioate-linked nucleotides.
- Ultrapure recombinant enzyme.
- Applications of the enzyme:
  - construction of nested unidirectional deletions of DNA fragments
  - generation of a single-stranded template for dideoxy-sequencing of DNA
  - site-directed mutagenesis and cloning of PCR products.

Storage Buffer:

25 mM Tris-HCl (pH 8.0 at 22°C), 0.05 mM dithiothreitol and 50% glycerol.

Assay Conditions:

50 mM Tris-HCl (pH 7.6 at 22°C), 10 mM MgCl2, 1 mM dithiothreitol and 1.5 nM duplex [3H] lambda DNA. Incubation is at 37°C for 30 min in a reaction volume of 20 µl.

Quality Control:

All preparations are assayed for contaminating endonuclease activity. Typical preparations are greater than 95% pure, as judged by SDS polyacrylamide gel electrophoresis.

References

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- **Henikoff, S.**, Unidirectional digestion with exonuclease III creates targeted breakpoints for DNA sequencing, *Gene*, 28, 351-359, 1984.
- **Guo**, *et al.*, New rapid methods for DNA sequencing based on exonuclease III digestion followed by repair synthesis, *Nucleic Acids Res*., 10, 2065-2084, 1982.
- **Vandeyar, M.A.**, *et al*., A simple and rapid method for the selection of oligodeoxynucleotide-directed mutants, *Gene*, 65, 129-133, 1988.

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- **Li, Ch.** *et al*., Ligation independent cloning irrespective of restriction site compatibility, *Nucleic Acids Res.*, 25, 4165-4166, 1997.
- **Richardson, C. C.** *et al.* (1964) *J. Biol. Chem*.239,251-258.

Ordering information

Catalog size quantities and prices may be found at http://www.interchim.com.
Please inquire for higher quantities (availability, shipment conditions).

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