Exonuclease III

Catalog #	3412	3415
Package Size	5000	25000
Concentration	100 units/µl	

Description

Exonuclease III (Exo III) is an exodeoxyribonuclease that digests one strand of duplex DNA from a blunt end, 5' overhang or nick (1, 2). The enzyme acts in a 3'→5' direction producing stretches of single-stranded DNA (1, 2). Exo III is not active on 3' overhangs of 4 or more bases in length and ssDNA (2). The enzyme has also RNase H, 3'-DNA phosphatase, and apurinic DNA endonuclease activities (2, 3). Exo III digestions proceed at a uniform rate yielding predictable and reproducible results. However, the observed rate of nucleotide excision can vary depending on the individual characteristics of the reaction mix such as reaction temperature, ionic strength, template base content, template helical structure, and enzyme-to-DNA ratios(3-5).

Applications

- 3' → 5' exonuclease
- Production of unidirectional nested deletions
- Production of intermediates for site-directed mutagenesis
- Preparation of strand-specific probes

Preparation of single-stranded substrates for dideoxy sequencing

Protein purity

The physical purity of this enzyme is ≥99% as assessed by SDS-PAGE with Coomassie® blue staining (see figure below).

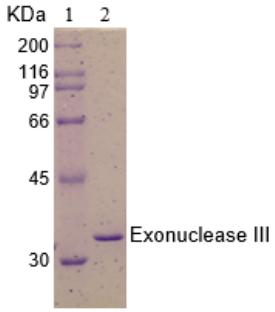

Fig: Lane 1. Protein marker and lane 2. Exonuclease III.

Product Source

E. coli BL21 (DE3) strain expressing *E. coli* Exonuclease III gene.

Product Includes

- Exonuclease III
- 10x Exonuclease III reaction buffer

1x Exonuclease III reaction buffer

33 mM Tris-acetate, 66 mM potassium acetate, 10 mM magnesium acetate, 1 mM DTT, pH 7.5 @ 25ºC

Storage Buffer

50 mM Tris-HCl, 50 mM KCl, 1 mM DTT, 0.1 mM EDTA, 50% Glycerol, pH 7.5 @ 25ºC

Storage Temperature

-20ºC

Heal inactivation

70°C for 20 min

Unit Definition

One unit is defined as the amount of enzyme that incorporates 1 nmoles of dNTP into acid-insoluble form in 30 minutes at 37º C with duplex DNA.

Quality Control assays

Exonuclease III is free from contaminating nuclease activities.

References

1. Weiss, B. (1976) J. Biol. Chem. 251, 1896.
2. Rogers, S.G. and Weiss, B. (1980) Meth. Enzymology 65, 201.
3. Sambrook, J. et al., (1989) in: Molecular Cloning: A Laboratory Manual (2nd ed.), Cold Spring Harbor Laboratory Press, New York.
4. Richardson, C.C. et al., (1964) J. Biol. Chem. 239, 251.
5. Guo, L.H. and Wu, R. (1982) Nucl. Acids Res. 10, 2065

Intact Genomics, Inc. 1100 Corporate Square Drive, Suite 257, St. Louis, MO 63132-2933, USA **Phone** 314.942.3655 **Fax:** 314.942.3656 **Email** sales@intactgenomics.com **www.intactgenomics.com**