

CERTIFICATE OF ANALYSIS

S1 Nuclease

#EN0321 10000u

Lot: **Quality guaranteed:**

Concentration: 100u/μl

Supplied with: 2x1ml of 5X Reaction Buffer

Store at -20°C

3

In total 3 vials.

Description

S1 Nuclease, a single-strand specific nuclease, degrades single-stranded nucleic acids, releasing 5'-phosphoryl mono- or oligonucleotides. Five times more active on DNA than on RNA (1).

The enzyme is a glycoprotein with a carbohydrate content of 18%.

Source

Aspergillus oryzae

Unit Definition

One unit of enzyme produces 1μg of acid soluble deoxyribonucleotides in 1min at 37°C.

Activity Assay

30mM sodium-acetate (pH 4.5), 50mM NaCl, 0.1mM ZnCl₂, 5% glycerol, 800μg/ml heat denatured calf thymus DNA.

Storage Buffer

20mM Tris-HCl (pH 7.5), 50mM NaCl, 0.1mM ZnCl₂ and 50% glycerol.

5X Reaction Buffer

200mM sodium acetate (pH 4.5 at 25°C), 1.5M NaCl and 10mM ZnSO₄.

Applications

- Removal of single-stranded overhangs of DNA fragments (2).
- RNA transcript mapping (3, 4).
- Creation of deletions in DNA fragments in conjunction with Exonuclease III (5), see protocols on Fermentas Catalog 2004-2005, p.181, 189, or on www.fermentas.com.

Inactivation

By heating at 70°C for 10min in the presence of EDTA.

Note

S1 Nuclease can introduce breaks into double-stranded DNA, RNA and DNA-RNA hybrids at high enzyme and low salt concentrations (6).

QUALITY CONTROL ASSAY

S1 Nuclease was tested for the absence of contaminating double-stranded DNA specific nuclease activity, and for the generation of unidirectional deletions in DNA fragments.

Quality authorized by:



Jurgita Zilinskiene

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.fermentas.com for Material Safety Data Sheet of the product.

References

1. Lehman, R.I., Endonucleases specific for single-stranded polynucleotides, *The Enzymes*, 3rd. Ed. (Boyer, P.D., ed.), Academic Press Inc., vol. 4, 193-201, 1981.
2. Roberts T.M., et al., A general method for maximizing the expression of a cloned gene, *Proc. Natl. Acad. Sci. USA*, 76, 760-764, 1979.
3. Berk, A.J., Sharp, P.A., Spliced early mRNAs of simian virus, *Proc. Natl. Acad. Sci. USA*, 75, 1274-1278, 1978.
4. Weidle, U., Weissmann, C., The 5'-flanking region of a human IFN-alpha gene mediates viral induction of transcription, *Nature*, 303, 442-446, 1983.
5. Henikoff, S., Unidirectional digestion with exonuclease III creates targeted breakpoints for DNA sequencing, *Gene*, 28, 351-359, 1984.
6. Vogt, V.M., Purification and further properties of single-strand-specific nuclease from *Aspergillus oryzae*, *Eur. J. Biochem.*, 33, 192-200, 1973.

Related Products

- ExoIII/S1 Deletion Kit #K0421
- Exonuclease III #EN0191
- Nb.Bpu10I #ER1681
- Water, nuclease-free #R0581
#R0582