GIBCO BRL

LIFE TECHNOLOGIES™

S1 Nuclease

Cat. No. 18001-016

Lot No. _____ 20,000 units; ____ U/µl

Exp. Date: _____. Store at -20°C (not frost-free).

Description:

S1 Nuclease is purified from *Aspergillus oryzae*. This enzyme is a single-strand-specific endonuclease which hydrolyzes single-stranded RNA or DNA into 5′ mononucleotides. It hydrolyzes single-stranded regions in duplex DNA such as loops and gaps. Duplex nucleic acids are digested completely in the presence of excess enzyme. This zinc metalloenzyme is stable in reactions at 65°C and is inhibited by EDTA, citrate, phosphate buffers, and > 0.6% (w/v) SDS. S1 Nuclease is suitable for nuclease mapping techniques, removing single-stranded regions from DNA, and exonuclease III-ordered sequencing.

Components:

18001-016	S1 Nuclease	Lot No.
Y02292	10X S1 Nuclease Buffer	Lot No.
Y02293	3 M NaCl	Lot No.
Y02294	S1 Nuclease Dilution Buffer	Lot No.

Unit Definition:

One unit hydrolyzes 1 µg of denatured DNA to acid-soluble material in one minute at 37°C.

Storage Buffer:

20 mM Tris-HCl (pH 7.5)
0.1 mM zinc acetate
50 mM NaCl
50% (v/v) glycerol

10X S1 Nuclease Buffer:

300 mM sodium acetate (pH 4.6)
10 mM zinc acetate
50% (v/v) glycerol

S1 Nuclease Dilution Buffer:

20 mM Tris-HCl (pH 7.5)
0.1 mM zinc acetate
50 mM NaCl
5% (v/v) glycerol

Store buffers and 3 M NaCl at 4°C or -20°C.

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Quality Control Data:
This product has passed the following quality control assays: absence of detectable double-strand specific deoxyribonuclease and phosphatase activities.

The enclosed buffers were assayed with the enzyme and met quality control specifications.

Notes:
1. pH optimum is 4.0 to 4.3 and the rate drops 50% at pH 4.9. Reactions are performed at pH 4.6 to avoid depurination of the DNA.
2. Zn^{++} is required for enzymatic activity.
3. The enzyme is largely unaffected by NaCl concentrations in the range of 10 to 300 mM. NaCl is used in reactions to stabilize the ends of double-stranded DNA.