MEBEP TECH(HK) Co., Limited

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Nuclease S1

Product Number: NST01

Shipping and Storage

-20°C storage, ultra-low temperature ice pack transportation.

Description

Chromatographically purified. Specific for single-stranded DNA (ssDNA) degradation. Activity on native (ds) DNA undetectable under the assay conditions. A frozen solution in 30mM sodium acetate, pH 4.6, 50mM NaCl, 1mM ZnCl2, and 50% glycerol.

Nuclease S1 isolated from certain Neurospora and Aspergillus species specifically hydrolyzes both terminal and internal phosphodiester bonds of single-stranded DNA and RNA. Nuclease S1 has a molecular weight of approximately 34kDa and exists as a monomer. The optimum pH range is 4.0-4.6, and it is activated by Zn^{2+} and/or Ca^{2+}. Inhibitors are EDTA, citrate and high concentrations of SDS.

Application

Nuclease S1 from Aspergillus oryzae has been used in a study to assess a biochemical method for mapping mutational alterations in DNA.It has also been used in a study to investigate the DNA damage and repair in a γ-irradiated rat brain tumor.

Specifications

1. Concentration: ≥ 100000-500000 units/mL.
2. Unit definition: One Unit hydrolyzes one microgram of denatured calf thymus DNA per minute at 37°C, pH 4.6.

Biochemical mechanism

The nuclease S1 isolated from Aspergillus oryzae has endonuclease and exonuclease hydrolytic activity on the phosphodiester bonds of single stranded DNA and RNA, producing 5 '- phosphomononucleoside and 5' - phosphooligonucleoside end products. It can be used to digest unannealed nucleotide tails and hairpin loops in RNA and DNA double strands, as well as to convert supercoiled DNA into linear form.