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ProductInformation

Nuclease S1
from *Aspergillus oryzae*

Product Number **N 5661**
Storage Temperature –20 °C

EC 3.1.30.1
CAS# 37288-25-8

Product Description
Nuclease S1 isolated from *Aspergillus oryzae* exhibits endo- and exolytic hydrolytic activity for the phosphodiester bonds of single-stranded DNA and RNA yielding 5'-phosphomononucleotide and 5'-phosphooligonucleotide end-products.[1,2] It is used to digest non-annealed polynucleotide tails and hairpin loops in RNA and DNA duplexes[3] and can be used to convert superhelical DNA to the linear form.[4]

Nuclease S1 may exhibit some nickase activity at high concentrations. This nickase activity can be inhibited by including a high concentration of NaCl (approximately 200 mM) in the reaction buffer.[5]

Nuclease S1 has a molecular weight of approximately 34 kDa and exists as a monomer.[5] The optimal pH range is 4.0 to 4.6 and it is activated by Zn^{2+} and/or Ca^{2+} ions. Nuclease S1 is inhibited by chelators, such as EDTA and citrate, and by high concentrations of SDS.[5]

This product is supplied as a solution in 30 mM sodium acetate, pH 4.6, 50 mM NaCl, 1 mM $ZnCl_2$, and 50% glycerol.

Activity: minimum 100,000 units per ml

Unit Definition: One unit will cause 1.0 µg of single-stranded nucleic acid to become perchloric acid soluble per minute at pH 4.6 at 37 °C.

Precautions and Disclaimer
This product is for laboratory use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability
The product ships on wet ice and storage at –20 °C is recommended.

Dilute solutions can be stabilized by adding 0.1% albumin and 10% glycerol

References
1. IUBMB Enzyme Nomenclature
2. Harada, F., and Dahlberg, J.E., Nucleic Acids Res., **2**, 865-71 (1975).
3. Sambrook, J., et al., Molecular Cloning: A Laboratory Manual , Cold Spring Harbor, (Cold Spring Harbor, NY: 1989), p 8.15.
4. Beard, P., et al., J. Virol., **12**, 1303-1313 (1973).
5. Vogt, V., Meth. Enzymol., **65**, 248 (1980).

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