RNase A

#Cat: NB-03-0161 **Size: 1 ml**
#Cat: NB-03-0162 **Size: 1 ml**

	NB-03-0161	NB-03-0162
Concentration	10 mg/ml	100 mg/ml

Features

The RNase A is free of DNase activity. It is not necessary to heat it before use.

Description

The RNase A, DNase and protease-free is an endoribonuclease that specifically degrades single-stranded RNA at C and U residues. It cleaves the phosphodiester bondbetween the 5'-ribose of a nucleotide and the phosphate group attached to the 3'-ribose of an adjacent pyrimidine nucleotide. The resulting 2', 3'-cyclic phosphate is hydrolyzed to the corresponding 3'-nucleoside phosphate.

Source

Bovine pancreas

Molecular Weight

13.7 kDa monomer

Applications

-Plasmid and genomic DNA preparation
-Removal of RNA from recombinant protein preparations
-Ribonuclease protection assays
-Mapping single-base mutations in DNA or RNA

Quality Control

The absence of endodeoxyribonucleases, exodeoxyribonucleases and proteases confirmed by appropriate quality tests. Functionally tested for RNA digestion in a plasmid DNA purification procedure.

Concentration

Protein concentration is determined by measuring the absorbance at 278 nm usingmolar absorption coefficient e=9800$M^{-1}cm^{-1}$.

Definition of Activity Unit

One unit of the enzyme causes an increase in absorbance of 1.0 at 260 nm when yeastRNA is hydrolyzed at 37°C and pH 5.0.
Fifty units are approximately equivalent to 1 Kunitz unit.

Specific Activity

>5000 u/mg protein (>100 Kunitz units/mg protein).

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Storage Buffer

The enzyme is supplied in: 50 mM Tris-HCl (pH 7.4) and 50% (v/v) glycerol.

Inhibition and Inactivation

- Inhibitors: the most potent inhibitor is a ~50 kDa protein from cytosol of mammalian cells, e.g., RiboLock™ RNase Inhibitor.
- Other inhibitors: uridine 2',3'-cyclic vanadate, 5'-diphosphoadenosine 3'-phophate and 5'-diphosphoadenosine 2'-phophate (2), SDS, diethyl pyrocarbonate, 4M guanidinium thyocyanate plus 0.1M 2-mercaptoethanol and heavy metal ions. Inactivated by phenol/chloroform extraction.
- Inactivated by phenol/chloroform extraction.

Note

- The working concentration for RNase A is 1-100 µg/ml depending on theapplication.
- The enzyme is active under a wide range of reaction conditions. At low salt concentrations (0 to 100 mM NaCl), RNase A cleaves single-stranded and double-stranded RNA as well the RNA strand in RNA-DNA hybrids. However, at NaCl concentrations of 0.3 M or higher, RNase A specifically cleaves single-stranded RNA.

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.