INSTRUCTION MANUAL

Ribonuclease A from bovine pancreas Cat.No. 34390

Product Description:

General	RNase A is an endoribonuclease that attacks at the 3'-phosphate of a pyrimidine nucleotide. The sequence of pG-pG-pC-pA-pG will be cleaved to give pG-pG-pCp and A-pG. The highest activity is exhibited with ssRNA[1].
Application	• Plasmid and genomic DNA preparation • Removal of RNA from recombinant protein preparations. • Ribonuclease protection assays • Mapping single-base mutations in DNA or RNA
Features	• Activity: ca. 70 Kunitz units/mg*, lyophilisate • Purity: min. 70 % • Molecular weight (M_r): ca. 13700 (monomer) • Isoelectric point (pI): 9.6 • Optimal pH: 7.0 (activity range 6 - 10)
Stability and storage	RNase A is an extremely stable enzyme, remarkable resistant to heating. It readily renatures following treatment with most denaturing agents. The lyophilisate should be stored at +2 °C to +8 °C . Prepare stock solutions in TE buffer and store in aliquots at –20 °C.
Inhibition/ Inactivation	Ribonuclease inhibitor, Vanadyl-ribonucleoside complexes, arabinonucleosides, Zn^{2+}, Cu^{2+}, penicillin, Vitamin B12, SDS, DEPC, 4 M guanidinium thiocyanate plus 0.1 M 2-mercaptoethanol. Most polyanions show some inhibitory effect. Inactivated by phenol /chlo-roform extraction.
Reaction conditions	Working concentration: 1 – 100 µg/ml (depending on application) The enzyme is active under a wide range of reaction conditions. At low salt concentrations (0 to 100 mM NaCl), RNase cleaves ss and dsRNA as well the RNA strand in RNA-DNA hybrids. At NaCl concentrations of 0.3 M or higher, RNase A specifically cleaves ssRNA[2]. **DNAse-free RNase:** Solve RNase A in TE buffer at 1 mg/ml and boil solution for 10 – 15 minutes. Store aliquots at –20 °C.

***Unit definition:** 1 U is that amount of activity which is capable of causing within 1 minute a decrease in absorbance at 300 nm equivalent to the maximum possible change in a 0.05 % solution of yeast RNA at 25 °C, pH 5.0.

[1]Burell, M.M., Enzymes of Molecular Biology, Vol. 16, 263 – 270 (1993).
[2]Asubel, f. M., et al., Current Protocols in Molecular Biology, vol. 1, John Wiley & Sons, Inc., Brooklyn, NY, 3.13.1, 1994 - 2005

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