PRODUCT INFORMATION

Ribonuclease A from bovine pancreas Art.-Nr. 34388

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].

Features

- Activity: min. 80 Kunitz units/mg*
- Purity: min. 90 % (ion exchange chromatography)
- Free of detectable DNase and protease activity, not necessary to heat before use
- Salt free, chromatographically homogeneous lyophilisate
- Molecular weight (Mr): 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.

Application

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

Inhibition/ Inactivation

Ribonuclease inhibitor, vanadylribonucleoside complexes, arabinonucleosides, Zn^{2+}, Cu^{2+}, penicillin, vitamin B12, SDS, DEPC, 4 M guanidinium thiocyanate plus 0.1 M 2-mercaptoethanol. Most polyanions have an inhibitory effect. Inactivated by phenol/chloroform 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].

***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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