Ribonuclease A Solution from bovine pancreas
Solution of 50% glycerol, for molecular biology

Catalog Number R4642
Storage Temperature –20 °C

CAS RN 9001-99-4
EC 3.1.27.5
Synonyms: Ribonuclease I, Pancreatic ribonuclease, Ribonuclease 3’-pyrimidino oligonucleotidohydrolase, RNase A, Endoribonuclease I

Product Description
Ribonuclease A (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-p Cp and A-pG. The highest activity is exhibited with single-stranded RNA.1

RNase A is a single chain polypeptide containing 4 disulfide bridges. In contrast to RNase B, RNase A is not a glycoprotein.2 RNase A can be inhibited by alkylation of His12 or His119, which are present in the active site of the enzyme.3 Activators of RNase A include potassium and sodium salts.

Molecular mass:4 13.7 kDa (amino acid sequence)
Extinction coefficient:5 E1% = 7.1 (280 nm)
Isoelectric point:6 pI = 9.6
Optimal temperature: 60 °C (activity range of 15-70 °C)
Optimal pH:7 7.6 (activity range of 6-10)
Inhibitors: ribonuclease inhibitor

The product is supplied in a solution containing 50% glycerol and 10 mM Trizma®-HCl, pH 8.0.

Activity: ≥70 Kunitz8 units/mg protein

This product has been specifically used in studies of nuclear envelope isolation,10 echinoderm embryos,11 and molecular cytogenics.12

Precautions and Disclaimer
For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Note: RNase A is stable to both heat and detergents. In addition, it adsorbs strongly to glass. Scrupulous precautions are necessary to ensure that residual RNase A does not cause artifacts in processes that require intact RNA.

Preparation Instructions
Note: Boiling stock solutions of Catalog No. R4642 to inactivate residual DNase is not necessary, and may cause precipitation of RNase and possible loss of enzymatic activity. If an RNase A solution is heated at a neutral pH, precipitation will occur. When heated at a lower pH, some precipitation may occur because of protein impurities that are present.

Storage/Stability
This product remains active for at least 2 years when stored properly at –20 °C.

RNase A is a very stable enzyme and solutions have been reported to withstand temperatures up to 100 °C. At 100 °C, an RNase A solution is most stable between pH 2.0 and 4.5.13

Procedure
For removal of RNA from preparations of plasmid DNA, DNase-free RNase A is used at a final concentration of 10 μg/ml.14
References
