vivantis

PRODUCT INFORMATION
Ribonuclease A (RNase A)
(Lyophilized Form)

Product: Ribonuclease A

Grade: Molecular Biology Grade

Code: PC0713-250mg / 500mg / 1g

Lot No.:

Expiry Date:

Description

RNase A is an endoribonuclease that is from bovine pancreas for molecular biology applications. The major application for RNase A is the removal of RNA from preparation of plasmid DNA as well as extraction of plasmid DNA. It is also used in removal of unspecifically bound RNA; RNase protection assays; analysis of RNA sequences as well as hydrolysis of RNA contained in protein samples.

RNase A 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 single stranded RNA. RNase A is a single chain polypeptide containing 4 disulfide bridges. RNase A can be inhibited by alkylation of His^{12} or His^{119}, which are present in the active site of the enzyme. Activators of RNase A include potassium and sodium salts.

Molecular mass:	13.7 kDa (amino acid sequence)
Extinction coefficient:	E1% = 7.1% (280nm)
Isoelectric point:	pI: 9.6
Optimum temperature:	60°C (activity range of 15 - 70°C)
Optimum pH:	7.5 (activity range of 6 - 10)
Inhibitors:	Ribonuclease inhibitor
Activity (Kunitz):	≥60 units/mg protein

Storage Temperature

Store at **-15 to -25°C** within specification range for 24 months. Avoid exposure to frequent temperature changes. See the expiration date on the stickers of product item.
RNase A s 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.

Preparation of RNase A Solution

To reconstitute RNase A, **Tris Buffer** and **Nuclease-Free Water** can be used. And the RNase A solution is most stable between pH2.0 and pH4.5. For universal test, **Nuclease-Free Water** and **Tris Buffer with pH7.5** are the most common buffers used to reconstitute RNase A.

The **recommended concentration for the stock solution** is **10 mg/ml to 20 mg/ml**. The preparation is adding the 10mg of RNase A powder and dissolves with 1ml of Tris Buffer or Nuclease-Free Water. Always keep the RNase A powder or RNase solution in cold, suggested -20°C.
*For longer storage, RNase A can be reconstituted with 50% of Tris Buffer with pH7.5 – pH8.0 and 50% of glycerol.

Suggested Procedures

For the application of removal of RNA from preparations of plasmid DNA, the **suggested final concentration** used is **0.2 mg/mL**.

Boiling stock solutions of the RNase A to inactivate residual DNase I is not necessary and may cause precipitation of RNase A and possible loss of enzymatic activity. If the RNase A solution is heated at a neutral pH, precipitation will occur. If the RNase A solution heated at a lower pH, some precipitation may occur due to the protein impurities that are present.

Disclaimer

RNase A is only for Research use only, not for drug, household or other uses. Please refer to the Material Safety Data Sheet for more information regarding hazards and safe handling practices.
Note: RNase A is stable to both heat and detergents. In addition, it absorbs strongly to glass. Scrupulous precautions are necessary to ensure RNase A residue does not cause artifacts in processes requiring intact RNA.