

# Ribonuclease A (RNase A)

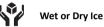
(DNase and Protease Free)

REF MO5411

Concentration: 20mg/ml



RUO



Components (supplied)

Contents of the kit	Amounts
Ribonuclease A (RNase A)	1 ml

### Description

Ribonuclease A (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 specifically degrades single-stranded RNA at C and U residues. It cleaves the phosphodiester bond between 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.



# **Molecular Weight**

Not applicable

# Specific activity

≥50 Kunitz u/mg

### Storage Buffer

The enzyme is supplied in 100 mM Tris-HCl (pH 8) and 50% (v/v) glycerol.

### Note

(2)

# The working concentration of RNase A is 1-100 μg/ml, depending on the application in extraction process (not for direct use).

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

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.



### Inhibition

• the most potent inhibitor is a ~ 50 kDa protein from the cytosol of mammalian cells, e.g., Ribonuclease Inhibitor (from human placenta), Phosphate, SDS, diethyl pyrocarbonate, 4M guanidinium thyocyanate plus 0.1 M 2-mercaptoethanol and heavy metal ions.

### Inactivation

• Inactivated by phenol/ chloroform extraction.

# **Quality Control**

#### DNase

Non-detected

# **Functional Assay**

Ribonuclease A was tested for RNA digestion in a plasmid DNA purification procedure.









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