RNase A

#GE011.0100 (100 mg)
(FOR RESEARCH ONLY)

Product: RNase A (Ribonuclease A) is a pancreatic endoribonuclease (13.7kDa monomer) that specifically cleaves single-stranded RNA at the 3'-end of pyrimidine residues. The phosphodiester bond between the 5'-ribose of one nucleotide and the phosphate group of the 3'-ribose of an adjacent pyrimidine nucleotide is broken and the resulting 2', 3'-cyclic phosphate is hydrolyzed to the corresponding 3'-nucleoside phosphate.

Applications: Plasmid DNA preparations, genomic DNA preparations, ribonuclease protection assays, RNA removal from recombinant protein preparations, single-base mutation mapping in DNA or RNA by mismatch cleavage.

Content: #GE010.0100 contains 100 mg lyophilized powder purified from bovine pancreas.

Properties: Free of DNases and proteases
Specific Activity: >50 Kunitz units per mg (>2500 Worthington units/mg)

QC: Functionally tested for RNA degradation in a plasmid DNA purification protocol. Absence of endodeoxyribonucleases, exodeoxyribonucleases, and proteases was confirmed by appropriate assays.

Storage: Store the lyophilized powder at +4ºC.

Prior to use:

Reconstitute RNase A at a desired concentration in a DNase-free buffer (e.g., TE 7.6 to 8.0 or 10mM Tris-HCl pH 7.4 to 7.6 containing 15mM NaCl), aliquot and store at -20°C.

Usage:

Enzyme activity

RNase A is active under a wide range of conditions. At low salt concentrations (<100 mM NaCl), RNA degrades single-stranded RNA, double-stranded RNA, as well as the RNA strand of RNA:DNA hybrids. At high salt concentrations (>300mM NaCl), RNA specifically cleaves single-stranded RNA. The recommended working solutions is 1-100 µg/ml (depending on the application). For the removal of RNA during preparation of plasmid DNA, a final concentration of 10 µg/ml is adequate.

Inhibition

RNase A can be inhibited by uridine 2', 3'-cyclic vanadate, 5'-diphosphoadenosine 2'-phosphate, 5'-diphosphoadenosine 3'-phosphate, SDS, diethyl pyrocarbonate (DEPC), 4M guanidinium thiocyanate containing 0.1M β-mercaptoethanol, and heavy metals.

Inactivation

RNase A is inactivated by phenol/chloroform extraction.