DATA SHEET

Jena Bioscience

RNase I (DNase free)

Endonuclease
recombinant, *E. coli*

Cat. No.	Amount
EN-176S	2.000 units
EN-176L	5 x 2000 units

Unit Definition: One unit is the amount of enzyme required to degrade 1 µg of RNA in 30 minutes at 37 °C.

For general laboratory use.

Shipping: shipped on gel packs

Storage Conditions: store at -20 °C

Additional Storage Conditions: avoid freeze/thaw cycles

Shelf Life: 12 months

Molecular Weight: 27.0 kDa

Purity: > 95 % (SDS-PAGE)

Form: liquid (Supplied in 10 mM Tris-HCl pH 8.0, 200 mM NaCl and 50 % [v/v] glycerol)

Applications:

- degrades RNA to cyclic nucleotide monophosphates leaving a 5'-OH and 2'-, 3'-cyclic monophosphate
- Ribonuclease Protection Assays
- Mapping or Quantitation of RNA by selective cleavage of single-strand regions
- Eliminates RNA from DNA- and protein purification

Description:
Ribonuclease I (27 kD) is a completely nonspecific ribonuclease that hydrolyzes the phosphodiester bond of all four bases.
It degrades any RNA to a mixture of mono-, di-, and trinucleotides and does not degrade DNA, although it does bind to DNA. It has a marked preference for single-stranded RNA over double-stranded RNA, which allows it to work well in RNase Protection Assays. It has a high specific activity which, coupled with its non-specificity, typically results in complete degradation of RNA using ng amounts of protein. Contains no endonuclease or exonuclease activity toward DNA substrates.

Reaction conditions:
For RNase Protection Assays using approximately 10 µg of total RNA per sample, we suggest using 100 - 500 units of enzyme at 37 °C for 30 min.
For boiling lysate minipreps we suggest using 50 units at 37 °C for 30 min.

Attention:

- does not require divalent cations and is fully active in Tris and phosphate buffers
- 80 % active in 0.3 M NaCl and 100 % active in 0.1 - 0.2 M NaCl
- completely and irreversibly inactivated by 0.1 % SDS or phenol extraction
- inactivated by freeze-thaw cycles in aqueous buffers but is protected from inactivation by 20 % glycerol

Selected References:
Meador *et al.* (1990) Cloning and sequencing the gene encoding Escherichia coli ribonuclease I: exact physical mapping using the genome library. Gene 95: 1.

Ono *et al.* (1987) Nucleotide sequence of the pnd gene in plasmid R483 and role of the pnd gene product in plasmolysis. Mirobiol. Immunol.31:1071.

Ito *et al.* (1983) The roles of RNA polymerase and RNAase I in stable RNA degradation in Escherichia coli carrying the srnB+gene. Biochim. Biophys. Acta 739: 27.