

Catalog Number: 101076, 193980

Ribonuclease A

Molecular Weight: 13,700

CAS # : 9001-99-4

E.C. # 2.7.7.16

Physical Description: White lyophilized powder

Source: *Bovine pancreas*

Composition: The composition and structure of ribonuclease A has been extensively investigated. The tertiary structure indicates that flexibility in a three-dimensional structure is essential for optimal catalytic activity. ^(2,3,4)

Optimum pH: 7.0 - 7.5 ⁽⁵⁾

Extinction coefficient: $E^{1\%}_{280} = 7.3$

Isoelectric point: pH 9.45 ⁽⁶⁾

Specificity: The enzyme is specific for pyrimidine nucleoside linkages, i.e., those cleaving cyclic 2',3'-pyrimidine nucleotide residues either singly or at the termination of purine nucleotide chains. ⁽⁷⁾

Inhibitors: Ribonuclease is inhibited by heavy metal ions and is competitively inhibited by DNA. The effect of denatured DNA is much greater than that of the native nucleic acid. ⁽⁸⁾

Stability: The enzyme is stable for years stored as a refrigerated dry powder or frozen in solution; refrigerated solutions are stable for weeks. The enzyme aggregates upon lyophilization and storage. ⁽⁹⁾ Special care should be given to handling of the enzyme because of its affinity for glass surfaces ⁽¹⁰⁾

Unit Definition: That amount of enzyme causing the hydrolysis of RNA at a rate such that k (velocity constant) equals unity at 25°C and pH 5.0.

Non-specific protease activity: Not detectable.

Purity: >70%

Solubility: Dissolves readily at 2 mg/ml in analytical grade water to give a clear colorless solution.

Availability:

Catalog Number	Description	Size
101076	Ribonuclease A	100 mg 250 mg 1 g
193980	Ribonuclease A, molecular biology reagent	10 mg 50 mg 250 mg 500 mg 1 g

References:

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- Wang, M., et. al., "Transition-state structure for a conformation change of Ribonuclease," *Bioorg. Chem.*, **v. 4**, 392 (1975).
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