Product Datasheet

Ribonuclease A (orb420131)

Description	Ribonuclease A
Conjugation	Unconjugated
Preservatives	50% (v/v) Glycerol. None
Form/Appearance	Liquid (sterile filtered)
Concentration	5 mg/mL
Storage	Store vial at 4° C or at -20° C or colder prior to opening product.
Note	For research use only
Application notes	Ribonuclease A application is one unit will cause an increase in the absorbance of 1.0 OD units at 260 nm at 37° C and pH 5.0 when yeast ribosomal RNA is hydrolyzed to acid soluble oligonucleotides.
Purity	RNase A is specific for pyrimidine nucleoside linkages (Volkin and Cohn 1953). The reaction is believed to take place in two steps. In the first step, the 3',5'-phosphodiester bond is cleaved, while generating a 2',3'-cyclic phosphodiester intermediate. In the second step, the cyclic phosphodiester is hydrolyzed to a 3'-monophosphate group. The first step is nonspecific with respect to the nitrogenous base of the substrate; however, the second step is absolutely specific for pyrimidine nucleotides with terminal 2',3'-cyclic phosphates. RNase B has the same specificity as RNase A toward both cyclic cytidylate and yeast RNA (Plummer and Hirs 1963). RNase A shows a preference for larger substrates (Nogués et al. 1995). The enzyme cleaves at cytidine residues twice as fast as at uridyl residues (Richards and Wyckoff 1971). Thr45 has been found to be most important for mediating the pyrimidine specificity, both by forming hydrogen bonds with pyrimidine bases and sterically excluding purine bases (del Cardayré and Raines 1994). The side chain of Asp83 is important for stabilizing the transition state during the cleavage of uridine-containing substrates; this residue has no effect on the kinetics of cytidine cleavage (del Cardayré and Raines 1995). Dnase - detected Protease - detected
Hazard Information	Non-Toxic
Expiration Date	12 months from date of receipt.

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