Data Sheet (Cat.No.TMPY-03180)

TargetMol

Ribonuclease A Protein, Human, Recombinant (His)

General Information

Synonyms:	RNS1;ribonuclease, RNase A family, 1 (pancreatic);RIB1;RAC1
Protein Construction:	A DNA sequence encoding the human RNASE1 (P07998) (Met1-Thr156) was expressed with a polyhistidine tag at the C-terminus. Predicted N terminal: Lys 29
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P07998
Molecular Weight:	16 kDa (predicted); 29 ,26 and 22 kDa (reducing conditions)

QC Testing

Biological Activity:	Measured by its ability to hydrolyze yeast RNA. One unit of the enzyme causes an increase in absorbance of 1.0 at 260 nm in 15 min when yeast RNA is hydrolyzed at 37°C and pH 7.0. The specific activity is >2.5×106 unit/mg.
Purity:	> 95 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

RNase A, also known as ribonuclease A and RNASE1, belongs to ribonuclease A superfamily. It is a pancreatic-type of secretory ribonuclease. RNase A is a basic protein and its many positive charges are consistent with its binding to RNA (a poly-anion). More generally, RNase A is unusually polar or, rather, unusually lacking in hydrophobic groups, especially aliphatic ones. As an endonuclease, RNase A cleaves internal phosphodiester RNA bonds on

the 3'-side of pyrimidine bases. It prefers poly(C) as a substrate and hydrolyzes 2',3'-cyclic nucleotides, with a pH optimum near 8.0. RNase A is monomeric and more commonly acts to degrade ds-RNA over ss-RNA. Alternative splicing occurs at this locus and four transcript variants encoding the same protein have been identified.

Reference

Tubert P,et al. (2011) Interactions crucial for three-dimensional domain swapping in the HP-RNase variant PM8. Biophys J. 101(2):459-67.

Vinayagam A,et al. (2011) A directed protein interaction network for investigating intracellular signal transduction. Sci Signal. 4(189):rs8.

Fischer S,et al. (2011) Expression and localisation of vascular ribonucleases in endothelial cells. Thromb Haemost. 105(2):345-55.

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