Data Sheet (Cat.No.TMPY-03855)

TargetMol

DNase I Protein, Human, Recombinant (His)

General Information

Synonyms:	DRNI;DNL1;deoxyribonuclease I
Protein Construction:	A DNA sequence encoding the human DNASE1 (P24855) (Met1-Lys282) was expressed with a polyhistidine tag at the C-terminus. Predicted N terminal: Leu 23
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P24855
Molecular Weight:	30.7 kDa (predicted); 37 kDa (reducing conditions)

QC Testing

Biological Activity:	One unit is defined as the amount of DNase I that degrades DNA and causes an increase in absorbance at 260 nm of 0.001/minute at 25°C , pH 5.0; The specific activity is >5000 unit/mg.
Purity:	> 85 % 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:

Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.

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

DNase1, also known as deoxyribonuclease I and DNL1, is a member of the DNase family. DNaseI is a nuclease that cleaves DNA preferentially at phosphodiester linkages adjacent to a pyrimidine nucleotide, yielding 5'-phosphate-terminated polynucleotides with a free hydroxyl group on position 3', on average producing tetranucleotides. DNaseI binds to the cytoskeletal protein actin. It binds actin monomers with very high (sub-

nanomolar) affinity and actin polymers with lower affinity. Mutations in DNase1 gene have been associated with systemic lupus erythematosus (SLE), an autoimmune disease. DNase1 is used to treat the one of the symptoms of cystic fibrosis by hydrolyzing the extracellular DNA in sputum and reducing its viscosity.

Reference

Shak S. et al., 1991, Proc Natl Acad Sci. 87 (23): 9188-92.
Yasutomo K. et al., 2001, Nat Genet. 28 (4): 313-4.
HAkkim A. et al., 2010, Proc Natl Acad Sci. 107 (21): 9813-8.

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