Data Sheet (Cat.No.TMPY-00828)

TargetMol

Iduronate 2 sulfatase/IDS Protein, Human, Recombinant (His)

General Information

Synonyms:	MPS2;IDS;SIDS;iduronate 2-sulfatase
Protein Construction:	A DNA sequence encoding human IDS precursor (NP_000193.1) (Met 1-Pro 550) was expressed with a C-terminal polyhistidine tag. Predicted N terminal: Ser 26
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P22304-1
Molecular Weight:	61 kDa (predicted); 85-95 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Measured by its ability to hydrolyze the substrate 4-Nitrocatechol Sulfate (PNCS). The specific activity is > 1.0 pmoles/min/μg.
Purity:	> 87 % 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

Iduronate 2-Sulfatase, also known as IDS, is a member of the highly conserved sulfatase family of enzymes that catalyze the hydrolysis of O- and N-sulfate esters from a variety of substrates. The human Iduronate 2-Sulfatase/IDS consists of a signal peptide, a propeptide, and a mature chain that may be further processed into two chains. Among the identified 18 human sulfatases, Iduronate 2-Sulfatase/IDS is required for the lysosomal degradation of the glycosaminoglycans (GAG), heparan sulfate, and dermatan sulfate. Multiple mutations in this

X-chromosome localized gene result in Iduronate 2-Sulfatase/IDS enzymatic deficiency and lead to the sex-linked Mucopolysaccharidosis Type II (MPS II), also known as Hunter Syndrome characterized by the lysosomal accumulation of the GAG and their excretion in urine. MPS II has a wide spectrum of clinical manifestations ranging from mild to severe due to the level of Iduronate 2-Sulfatase/IDS enzyme. Retroviral-mediated Iduronate 2-Sulfatase/IDS gene transfer into lymphoid cells would be a promising gene therapeutic strategy.

Reference

Wilson P.J.,et al.,(1990), Hunter syndrome: isolation of an iduronate-2-sulfatase cDNA clone and analysis of patient DNA. Proc. Natl. Acad. Sci. U.S.A. 87:8531-8535.

Wilson P.J.,et al., (1993), Sequence of the human iduronate 2-sulfatase (IDS) gene.Genomics 17:773-775.

Timms K.M.,et al.,(1995), 130 kb of DNA sequence reveals two new genes and a regional duplication distal to the human iduronate-2-sulfate sulfatase locus.Genome Res. 5:71-78.

Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481