Data Sheet (Cat.No.TMPY-02482)

TargetMol

Aconitase 1 Protein, Human, Recombinant (His)

General Information

Synonyms:	HEL60;IRP1;ACONS;aconitase 1, soluble;IREBP;IREBP1;IREB1
Protein Construction:	A DNA sequence encoding the human ACO1 (P21399) (Met 1-Lys 889) was expressed, with a polyhistidine tag at the N-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	P21399
Molecular Weight:	101 kDa (predicted); 90 kDa (reducing conditions)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 90 % 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 50 mM Tris, 100 mM NaCl, pH 8.0, 10% gly, 2 mM DTT. 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

Aconitase 1(ACO1) or IRP1 is one member of the aconitase family that contains a diverse group of iron-sulphur(Fe-S) isomerases and two types of iron regulatory protein. Aconitase exits in two forms: one is soluble and the other is mitochondrial. ACO1 is the soluble existing form, and the mitochondrial form is ACO2. Residues from all three N-terminal domains and the larger C-terminal domain contribute to the active site region. When the enzyme is activated, it gains an additional iron atom. ACO1 can assume two different functions in cells, depending on

different conditions. During iron scarcity or oxidative stress, ACO1 binds to mRNA stem-loop structures called iron responsive elements to modulate the translation of iron metabolism genes. In iron-rich conditions, ACO1 binds an iron-sulfur cluster to function as a cytosolic aconitase.

Reference

Robbins AH,et al. (1989) The structure of aconitase. Proteins: Structure, Function, and Bioinformatics. 5 (4): 289-312.

Volz K. (2008) The functional duality of iron regulatory protein 1. Curr Opin Struct Biol. 18 (1): 106-11.

Gruer MJ,et al. (1997) The aconitase family: three structural variations on a common theme. Trends Biochem Sci. 22 (1): 3-6.

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