Data Sheet (Cat.No.TMPY-02481)

TargetMol

ACOX1 Protein, Human, Recombinant (His)

General Information

Synonyms:	PALMCOX;ACOX;SCOX;acyl-CoA oxidase 1, palmitoyl
Protein Construction:	A DNA sequence encoding the human ACOX1 (AAH08767.1) (Met 1-Leu 660) was expressed, with a polyhistidine tag at the N-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	AAH08767.1
Molecular Weight:	76.7 kDa (predicted); 60 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:	> 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 20 mM Tris, 500 mM NaCl, pH 7.0, 20% gly, 3 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

Peroxisomal acyl-coenzyme A oxidase 1(ACOX1 or AOX) is the first enzyme of the fatty acid beta-oxidation pathway and belongs to the Acyl-CoA oxidase family. Human liver peroxisomes contain two acyl-CoA oxidases, namely, palmitoyl-CoA oxidase (ACOX1/AOX) and a branched chain acyl-CoA oxidase. The palmitoyl-CoA oxidase (ACOX1/AOX) oxidizes the CoA esters of straight chain fatty acids and prostaglandins and donates electrons directly to molecular oxygen, thereby producing H2O2. Human ACOX1/AOX is a protein of 661-amino acids,

including the carboxyl-terminal sequence(Ser-Lys-Leu) known as a minimal peroxisome-targeting signal. Human ACOX1/AOX, the first and rate-limiting enzyme of the peroxisomal β-oxidation pathway, has two isoforms including ACOX1a and ACOX1b, transcribed from a single gene. The human ACOX1b isoform is more effective than the ACOX1a isoform in reversing the Acox1 null phenotype in the mouse partly because of the Substrate utilization differences.

Reference

Vluggens A,et al. (2010) Functional significance of the two ACOX1 isoforms and their crosstalks with PPAR alpha and RXR alpha. Laboratory Investigation. 90: 696-708.Chu R,et al. (1995) Overexpression and characterization of the human peroxisomal acyl-CoA oxidase in insect cells. J Biol Chem. 270 (9): 4908-15.
Aoyama T,et al. (1994) Molecular cloning and functional expression of a human peroxisomal acyl-coenzyme A oxidase. Biochem Biophys Res Commun. 198 (3): 1113-8.

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