Data Sheet (Cat.No.TMPY-01480)

TargetMol

LTC4S Protein, Human, Recombinant (His)

General Information

Synonyms:	LTC4S;MGC33147;leukotriene C4 synthase
Protein Construction:	A DNA sequence encoding the human LTC4S (NP_665874.1) (Met 1-Ala 150) was fused with a polyhistidine tag at the C-terminus. Predicted N terminal: Met 1
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	Q16873
Molecular Weight:	17 kDa (predicted); 17 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 Hepes, 0.1% Triton 0.5% DOC, 10% Gly, pH 8.0.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

Leukotriene C4 synthase, also known as LTC4 synthase, Leukotriene-C(4) synthase, and LTC4S, is a multi-pass membrane protein that belongs to the MAPEG family. LTC4S is detected in the lung, platelets, and the myelogenous leukemia cell line KG-1 (at protein level). LTC4S activity is present in eosinophils, basophils, mast cells, certain phagocytic mononuclear cells, endothelial cells, vascular smooth muscle cells, and platelets. LTC4S is essential for the production of cysteinyl leukotrienes (Cys-LT), critical mediators in asthma. Mutagenic analysis of

the conjugation function of human LTC4S has identified R51 and Y93 as critical for acid and base catalysis of LTA4 and reduced glutathione, respectively. A comparison across species for proteins that possess LTC4S activity reveals conservation of both of these residues, whereas R51 is absent in the FLAP molecules. Thus, within the glutathione S-transferase superfamily of genes, alignment of specific residues allows the separation of LTC4S family members from their most structurally similar counterparts, the FLAP molecules. Defects in LTC4S are the cause of leukotriene C4 synthase deficiency (LTC4 synthase deficiency). LTC4 synthase deficiency is a fatal neurometabolic developmental disorder. It is associated with muscular hypotonia, psychomotor retardation, failure to thrive, and microcephaly.

Reference

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Penrose, JF. et al., 1999, Allergy Asthma Proc. 20 (6): 353-60.
Sayers, I. et al., 2003, Thorax. 58 (5): 417-24.
Schröder, O. et al., 2005, Cell Mol Life Sci. 62 (1): 87-94.

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