Data Sheet (Cat.No.TMPY-00084)

TargetMol

CLPS Protein, Rat, Recombinant (His)

General Information

Synonyms:	colipase, pancreatic
Protein Construction:	A DNA sequence encoding the rat Clps (NP_037271.1) (Met1-Gln112) was expressed with a polyhistidine tag at the C-terminus. Predicted N terminal: Ala 18
Species:	Rat
Expression Host:	HEK293 Cells
Accession:	P17084
Molecular Weight:	11.9 kDa (predicted)

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:	> 95 % 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:

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

Colipase belongs to the colipase family. Structural studies of the complex and of colipase alone have revealed the functionality of its architecture. It is a small protein with five conserved disulphide bonds. Structural analogies have been recognised between a developmental protein, the pancreatic lipase C-terminal domain, the N-terminal domains of lipoxygenases and the C-terminal domain of alpha-toxin. Colipase can only be detected in pancreatic acinar cells, suggesting regulation of expression by tissue-specific elements. Colipase allows lipase to anchor

noncovalently to the surface of lipid micelles, counteracting the destabilizing influence of intestinal bile salts. Without colipase the enzyme is washed off by bile salts, which have an inhibitory effect on the lipase. Colipase is a cofactor needed by pancreatic lipase for efficient dietary lipid hydrolysis. It binds to the C-terminal, non-catalytic domain of lipase, thereby stabilising as active conformation and considerably increasing the overall hydrophobic binding site.

Reference

Davis RC, et al. (1991) Assignment of the human pancreatic colipase gene to chromosome 6p21.1 to pter. Genomics. 10(1):262-5.

Lowe ME. (1997) Structure and function of pancreatic lipase and colipase. Annu Rev Nutr. 17: 141-58.

Verger R, et al. (1999) Colipase: structure and interaction with pancreatic lipase. Biochim Biophys Acta. 1441(2-3): 173-84.