Data Sheet (Cat.No.TMPY-03222)

TargetMol

PNLIP Protein, Human, Recombinant (His)

General Information

Synonyms:	PL;pancreatic lipase;PTL;PNLIPD
Protein Construction:	A DNA sequence encoding the human PNLIP (P16233) (Met1-Cys465) was expressed with a polyhistidine tag at the C-terminus. Predicted N terminal: Lys 17
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P16233
Molecular Weight:	51 kDa (predicted); 51 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:	> 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

PNLIP is an enzyme that belongs to the lipase family. Secreted from the pancreas, PNLIP is the primary lipase that hydrolyzes dietary fat molecules in the human digestive system, converting triglyceride substrates found in ingested oils to monoglycerides and free fatty acids. Bile salts secreted from the liver and stored in gallbladder are released into the duodenum where they coat and emulsify large fat droplets into smaller droplets, thus increasing the overall surface area of the fat, which allows the lipase to break apart the fat more effectively. The resulting

monomers (2 free fatty acids and one 2-monoacylglycerol) are then moved by way of peristalsis along the small intestine to be absorbed into the lymphatic system by a specialized vessel called a lacteal.

Reference

Hegele RA, et al. (2001) Polymorphisms in PNLIP, encoding pancreatic lipase, and associations with metabolic traits. J Hum Genet. 46(6):320-4.

Thomas A, et al. (2005) Role of the lid hydrophobicity pattern in pancreatic lipase activity. J Biol Chem. 280(48): 40074-83.

Colin DY, et al. (2008) Exploring the active site cavity of human pancreatic lipase. Biochem Biophys Res Commun. 370(3):394-8.

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