

Recombinant Mouse PLD4 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51723

Size: 10ug, 100ug

Protein Name: 5'-3' exonuclease PLD4 (EC 3.1.16.1) ((S,S)-bis(monoacylglycero)phosphate synthase PLD4) (EC 2.3.1.-) (Phospholipase D family member 4) (Phospholipase D4)

Synonym: Pld4

UniProt ID: Q8BG07

UniProt Link: www.uniprot.org/uniprotkb/Q8BG07/entry

Species Source: Mouse

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 503 AA

Molecular Weight: 56 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MDKKKEHPEMRIPLQTAVEVSDWPCSTSHDPHSGLGMLVGLSSVTILFLWQGATSFTSH
RMFPPEVPSWSWETLKGDAEQNNNSCQLILVESIPEDLPFAAGSPTAQPLAQAWLQLLDTARESVHI
ASYYSWLTGLDIGVNDSSSRQGEALLQKFQQLLLRNISVVVATHSPTLAKTSTDQLVLAHGAQIRQV
PMKQLTGGVLHSHKFWVVDGRHIYVGSANMDWRSALTQVKELGAIYNCSNLAQDLEKTFQTYWVLGT
PQAVLPKTWPRNFSSHINRFHPLRGPFDGVPTTAYFSASPPSLCPHGRTRDLDAVLGVMEGARQFI
YVSVMEYFPTTRFTHHARYWPVLDNALRAAALNKGVHVRLLVSCWFNTDPTMFAYLRSLQAFSNPS
AGISVDVKVFIVPGVGNHNSNIPFSRVNHSKFMVTDKTAYVGTSNWSYEDYFSHTAGVGLIVSQKTPRAQ
PGATTVQEQLRQLFERDWSSHYAMDLDLRQVPSQDCVW

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant 5'-3' exonuclease PLD4 (EC 3.1.16.1) ((S,S)-bis(monoacylglycero)phosphate synthase PLD4) (EC 2.3.1.-) (Phospholipase D family member 4) (Phospholipase D4) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: Lysosomal 5'→3' exonuclease that functions in nucleic-acid sensing by immune cells (PubMed:30111894, PubMed:34620855, PubMed:38537643, PubMed:40931063). Hydrolyzes phosphodiester bond in single-stranded RNA and DNA molecules, with a higher efficiency for molecules with 5' uridine and guanosine residues. It can stall at certain sites and does not necessarily proceed to complete exonucleolytic degradation, thereby producing nucleoside 3'-monophosphates but also 5'-end 5'-hydroxy deoxyribonucleotide/ribonucleotide fragments (PubMed:30111894, PubMed:34620855, PubMed:38537643). Through the processing of self and exogenous RNA and DNA molecules, provides molecular signals to toll-like receptors (TLRs) in innate immunity. Partially redundant with PLD3, it cooperates with the RNase T2/RNASET2 to generate 2',3'-cGMP and cytidine-rich RNA fragments that occupy the two TLR7 ligand-binding pockets, to trigger receptor activation and signaling (By similarity). Can exert polynucleotide phosphatase activity toward 5'-phosphorylated single-stranded DNA substrates although at a slow rate (PubMed:38537643). Could play a role in phagocytosis of activated microglia (PubMed:22102906).; Can alternatively catalyze the transfer (transphosphatidylolation) of a glycerol group between (S,R)-lysophosphatidylglycerol (LPG) and monoacylglycerol (MAG). The reaction is characterized by an R-to-S stereo-inversion which is essential for the resistance of the produced (S,S)-bis(monoacylglycero)phosphates (BMPs) to lysosomal degradation. The resulting BMPs, are phospholipids required for the formation of lysosomal intraluminal vesicles (ILVs) where lipid degradation can occur.

Subcellular Localization: Lysosome . Endoplasmic reticulum membrane ; Single-pass type II membrane protein . Golgi apparatus, trans-Golgi network membrane ; Single-pass type II membrane protein . Nucleus . Early endosome . Cytoplasmic vesicle, phagosome . Note=Activation of microglia induces translocation of PLD4 from the nucleus to the phagosomes.

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.