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PLD4 Antibody (N-term)
Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP17640a

Specification

PLD4 Antibody (N-term) - Product Information

Application	**WB,E**
Primary Accession	Q96BZ4
Other Accession	NP_620145.2
Reactivity	**Human**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Calculated MW	**55626**
Antigen Region	**50-76**

PLD4 Antibody (N-term) - Additional Information

Gene ID 122618

Other Names
Phospholipase D4, PLD 4, Choline phosphatase 4, Phosphatidylcholine-hydrolyzing phospholipase D4, PLD4, C14orf175

Target/Specificity
This PLD4 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 50-76 amino acids from the N-terminal region of human PLD4.

Dilution
WB~~1:1000
E~~Use at an assay dependent concentration.

Format
Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.

Storage
Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
PLD4 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

PLD4 Antibody (N-term) - Protein Information

Name PLD4 {ECO:0000303|PubMed:30111894, ECO:0000312|HGNC:HGNC:23792}

Function 5'->3' exonuclease that hydrolyzes the phosphodiester bond of single-stranded DNA (ssDNA) and RNA molecules to form nucleoside 3'- monophosphates and 5'-end 5'-hydroxy deoxyribonucleotide/ribonucleotide fragments (PubMed:30111894, PubMed:34620855, PubMed:38537643, PubMed:39423811). Partially redundant with PLD3, can cleave all four nucleotides displaying higher efficiency for ssDNA and RNA fragments initiated with uridine and guanosine residues and lower efficiency for cytidine-initiated substrates (PubMed:30111894, PubMed:34620855, PubMed:38537643, PubMed:39423811). As a result, it does not always degrade polynucleotides to the single nucleotide level, it can stall at specific sites sparing certain fragments from exonucleolytic degradation (PubMed:30111894, PubMed:34620855, PubMed:38537643, PubMed:39423811). Processes self and pathogenic ssDNA and RNA molecules that reach the endolysosomal compartment via phagocytosis or autophagy and may serve as 'danger' signals for recognition by innate immune receptors such as toll-like receptors (TLRs) (PubMed:38697119). Degrades mitochondrial CpG-rich ssDNA fragments to prevent TLR9 activation and autoinflammatory response, but it can cleave viral RNA to generate ligands for TLR7 activation and initiate antiviral immune responses (PubMed:38697119). In plasmacytoid dendritic cells, it cooperates with endonuclease RNASET2 to release 2',3'-cyclic guanosine monophosphate (2',3'-cGMP), a potent stimulatory ligand for TLR7 (PubMed:38697119). Produces 2',3'-cGMPs and cytidine-rich RNA fragments that occupy TLR7 ligand-binding pockets and trigger a signaling-competent state (PubMed:38697119). Can exert polynucleotide phosphatase activity toward 5'-phosphorylated ssDNA substrates although at a slow rate (PubMed:38537643). Transphosphatidylase that catalyzes the exchange with R to S stereo-inversion of the glycerol moiety between (S,R)-lysophosphatidylglycerol (LPG) and monoacylglycerol (MAG) substrates to yield (S,S)-bis(monoacylglycero)phosphate (BMP) (PubMed:39423811). Can synthesize a variety of (S,S)-BMPs representing the main phospholipid constituent of lysosomal intralumenal vesicle (ILV) membranes that bind acid hydrolases for lipid degradation (PubMed:39423811). Regulates the homeostasis and interorganellar communication of the endolysosomal system with an overall impact on cellular removal of dysfunctional organelles via autophagy as well as proper protein and lipid turnover. May play a role in myotube formation in response to ER stress (By similarity).

Cellular Location
Endoplasmic reticulum membrane {ECO:0000250|UniProtKB:Q8BG07}; Single-pass type II membrane protein {ECO:0000250|UniProtKB:Q8BG07}. Golgi apparatus, trans-Golgi network membrane {ECO:0000250|UniProtKB:Q8BG07}; Single-pass type II membrane protein {ECO:0000250|UniProtKB:Q8BG07}. Nucleus {ECO:0000250|UniProtKB:Q8BG07}. Early endosome {ECO:0000250|UniProtKB:Q8BG07}. Cytoplasmic vesicle, phagosome {ECO:0000250|UniProtKB:Q8BG07}. Lysosome Note=Activation of microglia induces translocation of PLD4 from the nucleus to the phagosomes. {ECO:0000250|UniProtKB:Q8BG07}

Tissue Location
Expressed in plasmacytoid dendritic cells and monocytes (at protein level).

PLD4 Antibody (N-term) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

PLD4 Antibody (N-term) - Images

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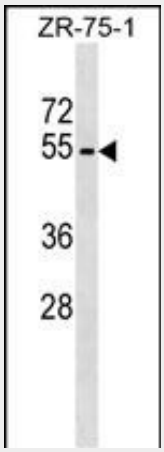

PLD4 Antibody (N-term) (Cat. #AP17640a) western blot analysis in ZR-75-1 cell line lysates (35ug/lane).This demonstrates the PLD4 antibody detected the PLD4 protein (arrow).

PLD4 Antibody (N-term) - References

Tao, W.A., et al. Nat. Methods 2(8):591-598(2005)
Tao, W.A., et al. Nat. Methods 2(8):591-598(2005)
Clark, H.F., et al. Genome Res. 13(10):2265-2270(2003)