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Anti-Phospholipase D4 Antibody

Rabbit polyclonal antibody to Phospholipase D4
Catalog # AP60360

Specification

Anti-Phospholipase D4 Antibody - Product Information

Application	**WB, IHC**
Primary Accession	Q96BZ4
Other Accession	Q8BG07
Reactivity	**Human, Mouse, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Calculated MW	**55626**

Anti-Phospholipase D4 Antibody - Additional Information

Gene ID 122618

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

Target/Specificity
KLH-conjugated synthetic peptide encompassing a sequence within the C-term region of human Phospholipase D4. The exact sequence is proprietary.

Dilution
WB~~WB (1/500 - 1/1000), IH (1/100 - 1/200)
IHC~~1:100~500

Format
Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.09% (W/V) sodium azide.

Storage
Store at -20 °C.Stable for 12 months from date of receipt

Anti-Phospholipase D4 Antibody - 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:<a

href="http://www.uniprot.org/citations/39423811" target="_blank">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).

Anti-Phospholipase D4 Antibody - Protocols

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

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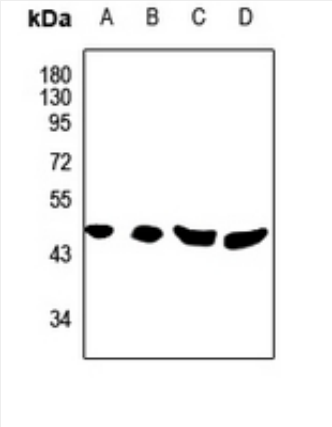
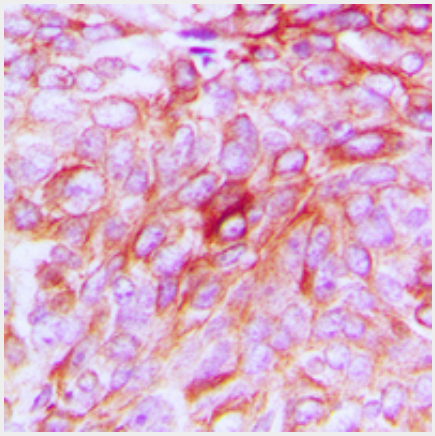
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Anti-Phospholipase D4 Antibody - Images



Western blot analysis of Phospholipase D4 expression in PC12 (A), CT26 (B), Hela (C), A549 (D) whole cell lysates.



Immunohistochemical analysis of Phospholipase D4 staining in human breast cancer formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The section was then incubated with the antibody at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

Anti-Phospholipase D4 Antibody - Background

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