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PLD6 Antibody (Center)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP11286c

Product Information

Application	WB, E
Primary Accession	Q8N2A8
Other Accession	NP_849158.1
Reactivity	Human, Mouse
Predicted	Rat, Bovine, Canine
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB28958
Calculated MW	28273
Antigen Region	125-154

Additional Information

Gene ID	201164
Other Names	Mitochondrial cardiolipin hydrolase, 31--, Choline phosphatase 6, Mitochondrial phospholipase, MitoPLD, Phosphatidylcholine-hydrolyzing phospholipase D6, Phospholipase D6, PLD 6, Protein zucchini homolog, PLD6
Target/Specificity	This PLD6 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 125-154 amino acids from of human PLD6.
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	PLD6 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PLD6
Function	Presents phospholipase and nuclease activities, depending on the different

physiological conditions (PubMed:17028579, PubMed:21397847, PubMed:28063496). Interaction with Mitoguardin (MIGA1 or MIGA2) affects the dimer conformation, facilitating the lipase activity over the nuclease activity (PubMed:26711011). Plays a key role in mitochondrial fusion and fission via its phospholipase activity (PubMed:17028579, PubMed:24599962, PubMed:26678338). In its phospholipase role, it uses the mitochondrial lipid cardiolipin as substrate to generate phosphatidate (PA or 1,2-diacyl-sn-glycero-3- phosphate), a second messenger signaling lipid (PubMed:17028579, PubMed:26711011). Production of PA facilitates Mitofusin-mediated fusion, whereas the cleavage of PA by the Lipin family of phosphatases produces diacylgycerol (DAG) which promotes mitochondrial fission (PubMed:24599962). Both Lipin and DAG regulate mitochondrial dynamics and membrane fusion/fission, important processes for adapting mitochondrial metabolism to changes in cell physiology. Mitochondrial fusion enables cells to cope with the increased nucleotide demand during DNA synthesis (PubMed:26678338). Mitochondrial function and dynamics are closely associated with biological processes such as cell growth, proliferation, and differentiation (PubMed:21397848). Mediator of MYC activity, promotes mitochondrial fusion and activates AMPK which in turn inhibits YAP/TAZ, thereby inducing cell growth and proliferation (PubMed:26678338). The endonuclease activity plays a critical role in PIWI-interacting RNA (piRNA) biogenesis during spermatogenesis (PubMed:21397847, PubMed:21397848). Implicated in spermatogenesis and sperm fertility in testicular germ cells, its single strand-specific nuclease activity is critical for the biogenesis/maturation of PIWI-interacting RNA (piRNA). MOV10L1 selectively binds to piRNA precursors and funnels them to the endonuclease that catalyzes the first cleavage step of piRNA processing to generate piRNA intermediate fragments that are subsequently loaded to Piwi proteins. Cleaves either DNA or RNA substrates with similar affinity, producing a 5' phosphate end, in this way it participates in the processing of primary piRNA transcripts. piRNAs provide essential protection against the activity of mobile genetic elements. piRNA-mediated transposon silencing is thus critical for maintaining genome stability, in particular in germline cells when transposons are mobilized as a consequence of wide-spread genomic demethylation (By similarity). PA may act as signaling molecule in the recognition/transport of the precursor RNAs of primary piRNAs (PubMed:21397847). Interacts with tesmin in testes, suggesting a role in spermatogenesis via association with its interacting partner (By similarity).

Cellular Location

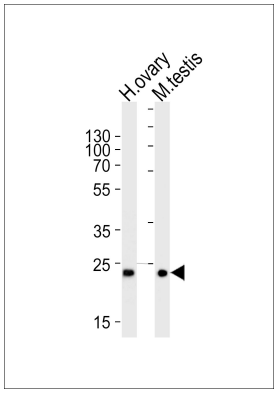
Mitochondrion outer membrane; Single-pass membrane protein. Golgi apparatus {ECO:0000250|UniProtKB:Q5SWZ9}. Note=Localization in the mitochondrial outer membrane is found in different cell types where phospholipase is the predominant activity, however, in pachytene spermatocytes and spermatids of mouse testes where nuclease activity is predominant, localization is restricted to the Golgi, suggesting this enzyme is localized in different subcellular compartments depending on the role (phospholipase or nuclease) it needs to play in each cell type and developmental stage.

Tissue Location

Predominantly expressed in testis and ovary, but not limited to gonads (at protein level) (PubMed:17028579, PubMed:21397847). It is also found in brain, heart, pituitary gland, prostate, pancreas, thyroid, bone marrow, lung and muscle (PubMed:21397847).

Images

Western blot analysis of lysates from human ovary and mouse testis tissue lysates (from left to right), using PLD6



Antibody (Center)(Cat. #AP11286c). AP11286c was diluted at 1:1000 at each lane. A goat anti-rabbit IgG H&L(HRP) at 1:5000 dilution was used as the secondary antibody. Lysates at 35ug per lane.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.