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PLD6 Antibody - C-terminal region

Rabbit Polyclonal Antibody
Catalog # AI15748

Product Information

Application	WB
Primary Accession	Q8N2A8
Other Accession	NM_178836, NP_849158
Reactivity	Human
Predicted	Human
Host	Rabbit
Clonality	Polyclonal
Calculated MW	28273

Additional Information

Gene ID	201164
Other Names	Mitochondrial cardiolipin hydrolase, 3.1.-.-, Choline phosphatase 6, Mitochondrial phospholipase, MitoPLD, Phosphatidylcholine-hydrolyzing phospholipase D6, Phospholipase D6, PLD 6, Protein zucchini homolog, PLD6
Format	Liquid. Purified antibody supplied in 1x PBS buffer with 0.09% (w/v) sodium azide and 2% sucrose.
Reconstitution & Storage	Add 50 ul of distilled water. Final anti-PLD6 antibody concentration is 1 mg/ml in PBS buffer with 2% sucrose. For longer periods of storage, store at 20°C. Avoid repeat freeze-thaw cycles.
Precautions	PLD6 Antibody - C-terminal region is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

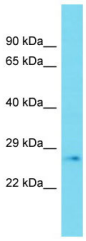
Name	PLD6
Function	Presents phospholipase and nuclease activities, depending on the different physiological conditions (PubMed:17028579, PubMed:21397847, PubMed:28063496). Interaction with Mitoguardin (MIGA1 or MIGA2) affects the dimer conformation, facilitating the lipase activity over the nuclease 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).

References

Ota T.,et al.Nat. Genet. 36:40-45(2004).
Zody M.C.,et al.Nature 440:1045-1049(2006).
Choi S.Y.,et al.Nat. Cell Biol. 8:1255-1262(2006).
Watanabe T.,et al.Dev. Cell 20:364-375(2011).
Huang H.,et al.Dev. Cell 20:376-387(2011).

Images



Host: Rabbit
Target Name: PLD6
Sample Tissue: Fetal Heart lysates
Antibody Dilution: 1.0µg/ml

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