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PLA2G7 Rabbit pAb

Catalog # AP99513

Product Information

Application	WB, IHC-P, IHC-F, IF
Primary Accession	Q13093
Other Accession	Q13093
Reactivity	Rat, Human, Mouse
Predicted	Dog
Host	Rabbit
Clonality	Polyclonal
Calculated MW	50077
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human PAFAH
Epitope Specificity	301-441/441
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the AB hydrolase superfamily. Lipase family.
DISEASE	Platelet-activating factor acetylhydrolase deficiency (PAFAD) [MIM:614278]: An enzymatic deficiency that results in exacerbated bodily response to inflammatory agents. It can be associated with several disease states including inflammatory gastrointestinal disorders, asthma and atopy. Asthmatic individuals with PAFAD may manifest aggravated respiratory symptoms. Note=The disease is caused by mutations affecting the gene represented in this entry. Asthma (ASTHMA) [MIM:600807]: The most common chronic disease affecting children and young adults. It is a complex genetic disorder with a heterogeneous phenotype, largely attributed to the interactions among many genes and between these genes and the environment. It is characterized by recurrent attacks of paroxysmal dyspnea, with weezing due to spasmodic contraction of the bronchi. Note=Disease susceptibility is associated with variations affecting the gene represented in this entry.Atopic hypersensitivity (ATOPY) [MIM:147050]: A condition characterized by predisposition to develop hypersensitivity reactions. Atopic individuals can develop eczema, allergic rhinitis and allergic asthma. Note=Disease susceptibility is associated with variations affecting the gene represented in this entry.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	This gene encodes platelet-activating factor acetylhydrolase isoform 2, a single-subunit intracellular enzyme that catalyzes the removal of the acetyl group at the SN-2 position of platelet-activating factor (identified as 1-O-alkyl-2-acetyl -sn-glyceryl-3-phosphorylcholine). However, this lipase exhibits a broader substrate specificity than simply platelet activating factor. Two other isoforms of intracellular platelet-activating factor acetylhydrolase exist, and both are multi-subunit enzymes. Additionally, there is a single-subunit serum isoform of this enzyme.

Additional Information

Gene ID	7941
Other Names	LDL-PLA2; LP-PLA2; PAFAD; PAFAH; PAFA_HUMAN; PLA2G7; PAF acetylhydrolase; 1-alkyl-2-acetylglycerophosphocholine esterase; 2-acetyl-1-alkylglycerophosphocholine esterase; Group-VIIA phospholipase A2 (gVIIA-PLA2); LDL-associated phospholipase A2 (LDL-PLA(2)); PAF 2-acylhydrolase; 3.1.1.47; phospholipase A2 group VII; phospholipase A2, group VII (platelet-activating factor acetylhydrolase, plasma)
Dilution	WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	PLA2G7
Synonyms	PAFAH
Function	Lipoprotein-associated calcium-independent phospholipase A2 involved in phospholipid catabolism during inflammatory and oxidative stress response (PubMed:10066756, PubMed:16371369, PubMed:17090529, PubMed:2040620, PubMed:7700381, PubMed:8624782). At the lipid-aqueous interface, hydrolyzes the ester bond of fatty acyl group attached at sn-2 position of phospholipids (phospholipase A2 activity) (PubMed:10504265, PubMed:2040620). Specifically targets phospholipids with a short-chain fatty acyl group at sn-2 position (PubMed:2040620). Can hydrolyze phospholipids with long fatty acyl chains, only if they carry oxidized functional groups (PubMed:2040620, PubMed:8624782). Hydrolyzes and inactivates platelet-activating factor (PAF, 1-O-alkyl-2-acetyl-sn-glycero-3-phosphocholine), a potent pro-inflammatory signaling lipid that acts through PTAFR on various innate immune cells (PubMed:10066756, PubMed:10504265, PubMed:11590221, PubMed:16371369, PubMed:18434304, PubMed:7592717, PubMed:7700381, PubMed:8624782, PubMed:8675689). Hydrolyzes oxidatively truncated phospholipids carrying an aldehyde group at omega position, preventing their accumulation in low-density lipoprotein (LDL) particles and uncontrolled pro-inflammatory effects (PubMed:2040620, PubMed:7700381). As part of high-density lipoprotein (HDL) particles, can hydrolyze phospholipids having long-chain fatty acyl hydroperoxides at sn-2 position and protect against potential accumulation of these oxylipins in the vascular wall (PubMed:17090529). Catalyzes the release from membrane phospholipids of F2-isoprostanes, lipid biomarkers of cellular oxidative damage (PubMed:16371369).
Cellular Location	Secreted, extracellular space Note=Associates with both LDL and HDL particles in plasma (PubMed:10066756, PubMed:11590221, PubMed:12821559, PubMed:18434304) Mainly associates with pro-inflammatory electronegative LDL particles (PubMed:12821559).
Tissue Location	Plasma (PubMed:11590221, PubMed:12821559). Secreted by macrophages (at protein level) (PubMed:11590221)

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