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PLA2G4A Antibody (Center)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP8510c

Product Information

Application	WB, IHC-P, IF, FC, E
Primary Accession	P47712
Other Accession	P50393, Q9TT38, P47713, P50392, P49147
Reactivity	Human, Rat, Mouse
Predicted	Chicken, Zebrafish, Mouse, Rabbit, Rat, Bovine, Canine
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB21320
Calculated MW	85239
Antigen Region	513-541

Additional Information

Gene ID	5321
Other Names	Cytosolic phospholipase A2, cPLA2, Phospholipase A2 group IVA, Phospholipase A2, Phosphatidylcholine 2-acylhydrolase, Lysophospholipase, PLA2G4A, CPLA2, PLA2G4
Target/Specificity	This PLA2G4A antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 513-541 amino acids from the Central region of human PLA2G4A.
Dilution	WB~~1:1000 IHC-P~~1:100~500 IF~~1:10~50 FC~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.05% (V/V) Proclin 300. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
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	PLA2G4A Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PLA2G4A

Synonyms	CPLA2, PLA2G4
Function	Has primarily calcium-dependent phospholipase and lysophospholipase activities, with a major role in membrane lipid remodeling and biosynthesis of lipid mediators of the inflammatory response (PubMed:10358058, PubMed:14709560, PubMed:16617059, PubMed:17472963, PubMed:18451993, PubMed:27642067, PubMed:7794891, PubMed:8619991, PubMed:8702602, PubMed:9425121). Plays an important role in embryo implantation and parturition through its ability to trigger prostanoid production (By similarity). Preferentially hydrolyzes the ester bond of the fatty acyl group attached at sn-2 position of phospholipids (phospholipase A2 activity) (PubMed:10358058, PubMed:17472963, PubMed:18451993, PubMed:7794891, PubMed:8619991, PubMed:9425121). Selectively hydrolyzes sn-2 arachidonoyl group from membrane phospholipids, providing the precursor for eicosanoid biosynthesis via the cyclooxygenase pathway (PubMed:10358058, PubMed:17472963, PubMed:18451993, PubMed:7794891, PubMed:9425121). In an alternative pathway of eicosanoid biosynthesis, hydrolyzes sn-2 fatty acyl chain of eicosanoid lysophospholipids to release free bioactive eicosanoids (PubMed:27642067). Hydrolyzes the ester bond of the fatty acyl group attached at sn-1 position of phospholipids (phospholipase A1 activity) only if an ether linkage rather than an ester linkage is present at the sn-2 position. This hydrolysis is not stereospecific (PubMed:7794891). Has calcium-independent phospholipase A2 and lysophospholipase activities in the presence of phosphoinositides (PubMed:12672805). Has O-acyltransferase activity. Catalyzes the transfer of fatty acyl chains from phospholipids to a primary hydroxyl group of glycerol (sn-1 or sn-3), potentially contributing to monoacylglycerol synthesis (PubMed:7794891).
Cellular Location	Cytoplasm. Golgi apparatus membrane. Nucleus envelope Note=Translocates to intracellular membranes in a calcium-dependent way.
Tissue Location	Expressed in various cells and tissues such as macrophages, neutrophils, fibroblasts and lung endothelium. Expressed in platelets (at protein level) (PubMed:25102815)

Background

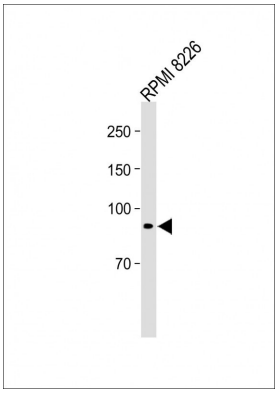
PLA2G4A is a member of the cytosolic phospholipase A2 group IV family. The enzyme catalyzes the hydrolysis of membrane phospholipids to release arachidonic acid which is subsequently metabolized into eicosanoids. Eicosanoids, including prostaglandins and leukotrienes, are lipid-based cellular hormones that regulate hemodynamics, inflammatory responses, and other intracellular pathways. The hydrolysis reaction also produces lysophospholipids that are converted into platelet-activating factor. The enzyme is activated by increased intracellular Ca(2+) levels and phosphorylation, resulting in its translocation from the cytosol and nucleus to perinuclear membrane vesicles.

References

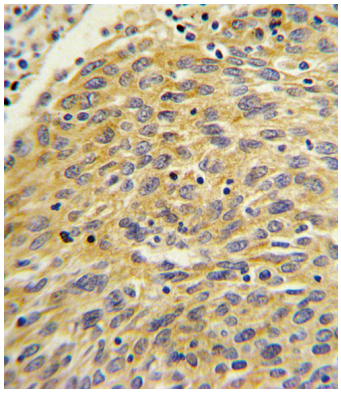
Sharp,J.D.,et.al., J. Biol. Chem. 266 (23), 14850-14853 (1991)
Clark,J.D., et.al., Cell 65 (6), 1043-1051 (1991)

Images

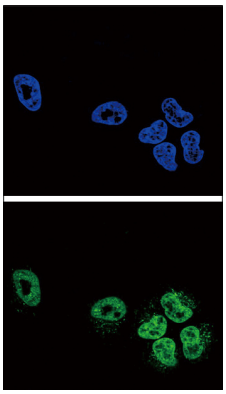
All lanes : Anti-PLA2G4A Antibody (Center) at 1:1000 dilution Lane 1: RPMI 8226 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat



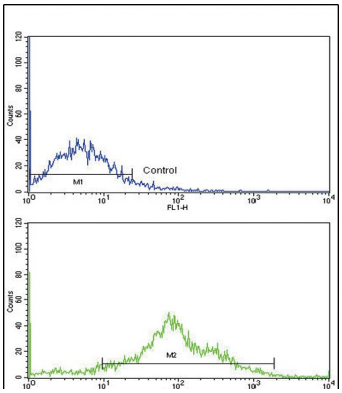
Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ASP1615) at 1/15000 dilution. Observed band size : 85kDa Blocking/Dilution buffer: 5% NFDM/TBST.



Formalin-fixed and paraffin-embedded human lung carcinoma with PLA2G4A Antibody (Center), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.



Confocal immunofluorescent analysis of PLA2G4A Antibody (Center)(Cat. #AP8510c) with NCI-H460 cell followed by Alexa Fluor寨?488-conjugated goat anti-rabbit lgG (green). DAPI was used to stain the cell nuclear (blue).



Flow cytometric analysis of NCI-H292 cells using PLA2G4A Antibody (Center)(bottom histogram) compared to a negative control cell (top histogram). FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

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