abcam

ab41433

Anti-Phospholipase C gamma 1/PLC-gamma-1 antibody [M156]

KO Validated

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	Preservative: 0.05% Sodium azide Constituents: PBS, 50% Glycerol (glycerin, glycerine), 0.1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Synthetic Peptide within Human PLCG1. The exact immunogen used to generate this antibody is proprietary information. Database link P19174
Clone number	M156
Purification technique	Affinity purification Protein A

Reactivity data

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Human

Dilution info	1/1000
Notes	-

Predicted

Species	Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/100
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Rat
Dilution info	-
Notes	-

Target data

See full target information PLCG1

Function	Mediates the production of the second messenger molecules diacylglycerol (DAG) and inositol 1,4,5-trisphosphate (IP3). Plays an important role in the regulation of intracellular signaling cascades. Becomes activated in response to ligand-mediated activation of receptor-type tyrosine kinases, such as PDGFRA, PDGFRB, EGFR,

FGFR1, FGFR2, FGFR3 and FGFR4 (By similarity). Plays a role in actin reorganization and cell migration (PubMed:17229814). Guanine nucleotide exchange factor that binds the GTPase DNM1 and catalyzes the dissociation of GDP, allowing a GTP molecule to bind in its place, therefore enhancing DNM1-dependent endocytosis (By similarity).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Storage information	Stable for 12 months at -20°C

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Phospholipase C gamma 1 (PLC-gamma-1) also known as PLCG1 or PLC-gamma plays an important role in cellular signaling. This enzyme has a molecular mass of approximately 150 kDa. It is found in multiple cell types but is highly expressed in the brain and immune cells. PLC-gamma-1 is involved in the hydrolysis of phosphatidylinositol 45-bisphosphate (PIP2) to generate inositol 145-trisphosphate (IP3) and diacylglycerol (DAG) leading to downstream signaling events that control various cellular processes.
Biological function summary	PLC-gamma-1 is integral in signal transduction and is an important player in the immune response. The protein does not function as part of a large multi-protein complex but interacts transiently with other signaling molecules. It acts downstream of growth factor receptors and immunoreceptors by mediating calcium release and activation of protein kinase C influencing cell proliferation migration and differentiation. Its expression pattern suggests a critical role in the nervous and immune systems affecting learning memory and immune defense.
Pathways	PLC-gamma-1 is an important component in both the phospholipase C and PLC-gamma pathways. These pathways include important interactions with proteins such as the receptor tyrosine kinases and Src family kinases. In these pathways PLC-gamma-1 modulates signals that guide cellular responses to external stimuli affecting processes like growth signaling and T-cell receptor activation which is vital in adaptive immunity.
Associated diseases and disorders	PLC-gamma-1 has significant connections to cancer and immune deficiencies. Abnormal PLC-gamma-1 activity is observed in certain cancers such as breast cancer where it influences tumor growth and metastasis. Its dysregulation in immune cells leads to disorders like autoimmune diseases by impacting proteins such as LAT and SLP-76 which are important in T-cell signaling. Understanding PLC-

gamma-1's regulatory mechanisms helps in developing targeted therapies for these conditions.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

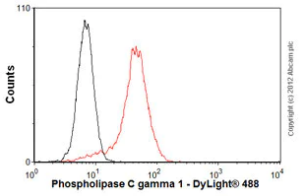
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

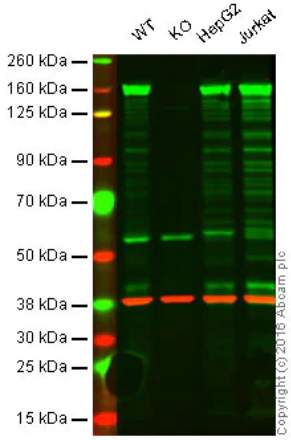
2 product images



Flow Cytometry (Intracellular) - Anti-Phospholipase C gamma 1/PLC-gamma-1 antibody [M156] (ab41433)

Phospholipase C gamma 1/PLC-gamma-1 Flow Cytometry (Intracellular) staining using mouse Anti-Phospholipase C gamma 1/PLC-gamma-1 antibody

Overlay histogram showing Jurkat cells stained with ab41433 (red line). The cells were fixed with 4% paraformaldehyde (10 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab41433, 1/100 dilution) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG1 [ICIGG1] (ab91353, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a positive signal in Jurkat cells fixed with 80% methanol (5 min)/permeabilized with 0.1% PBS-Tween for 20 min used under the same conditions.



Western blot - Anti-Phospholipase C gamma 1/PLC-gamma-1 antibody [M156] (ab41433)

Phospholipase C gamma 1/PLC-gamma-1 Western blot staining using mouse Anti-Phospholipase C gamma 1/PLC-gamma-1 antibody

Lane 1: Wild-type HAP1 cell lysate (20 µg)
Lane 2: Phospholipase C gamma 1/PLC-gamma-1 knockout HAP1 cell lysate (20 µg)
Lane 3: HepG2 cell lysate (20 µg)
Lane 4: Mouse brain tissue lysate (20 µg)
Lanes 1 - 4: Merged signal (red and green). Green - ab41433 observed at 160 kDa. Red - loading control, ab181602, observed at 37 kDa.

ab41433 was shown to recognize Phospholipase C gamma 1/PLC-gamma-1 when Phospholipase C gamma 1/PLC-gamma-1 knockout samples were used, along with additional cross-reactive bands. Wild-type and Phospholipase C gamma 1/PLC-gamma-1 knockout samples were subjected to SDS-PAGE. ab41433 diluted to 1/1000 and ab181602 (loading control to GAPDH) diluted to 1/10,000 and incubated overnight at 4°C. Blots were developed with Goat anti-Mouse IgG H&L (IRDye® 800CW) preadsorbed (ab216772) and Goat Anti-Rabbit IgG H&L (IRDye® 680RD) preadsorbed (ab216777) secondary antibodies at 1/10,000 dilution for 1 hour at room temperature before imaging.
All lanes:
Western blot - Anti-Phospholipase C gamma 1/PLC-gamma-1 antibody [M156] (ab41433)

Predicted band size: 148 kDa

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