

PLC γ 2 (B-10): sc-5283

BACKGROUND

Phosphoinositide-specific phospholipase C (PLC) plays a critical role in the initiation of receptor mediated signal transduction through the generation of the two second messengers, inositol 1, 4, 5-triphosphate and diacylglycerol from phosphatidylinositol 4, 5 bisphosphate. There are many mammalian PLC isozymes, including PLC β 1, PLC β 2, PLC β 3, PLC β 4, PLC γ 1, PLC γ 2, PLC δ 1, PLC δ 2 and PLC ϵ . After stimulation of the collagen receptor glycoprotein VI in human platelets, PLC γ 2 associates with several tyrosine-phosphorylated proteins (Syk, SLP-76, Lyn, linker for activation of T cells (LAT) and the FcR γ chain), which bind to its C-terminal SH2 domain. PLC γ 1 associates with Syk in B cells, but PLC γ 2 does not associate with Syk in platelets. The C-terminal SH2 domain is involved in the regulation of PLC γ 2. In addition, Btk can induce PLC γ 2 tyrosine phosphorylation and initiate calcium mobilization in CD72-stimulated B lymphocytes.

CHROMOSOMAL LOCATION

Genetic locus: PLCG2 (human) mapping to 16q23.3; Plcg2 (mouse) mapping to 8 E1.

SOURCE

PLC γ 2 (B-10) is a mouse monoclonal antibody raised against amino acids 826-985 of PLC γ 2 of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PLC γ 2 (B-10) is available conjugated to agarose (sc-5283 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-5283 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-5283 PE), fluorescein (sc-5283 FITC), Alexa Fluor[®] 488 (sc-5283 AF488), Alexa Fluor[®] 546 (sc-5283 AF546), Alexa Fluor[®] 594 (sc-5283 AF594) or Alexa Fluor[®] 647 (sc-5283 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-5283 AF680) or Alexa Fluor[®] 790 (sc-5283 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

PLC γ 2 (B-10) is recommended for detection of PLC γ 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PLC γ 2 siRNA (h): sc-36268, PLC γ 2 siRNA (m): sc-36269, PLC γ 2 shRNA Plasmid (h): sc-36268-SH, PLC γ 2 shRNA Plasmid (m): sc-36269-SH, PLC γ 2 shRNA (h) Lentiviral Particles: sc-36268-V and PLC γ 2 shRNA (m) Lentiviral Particles: sc-36269-V.

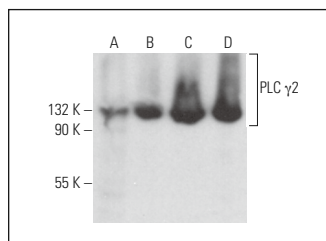
Molecular Weight of PLC γ 2: 155 kDa.

Positive Controls: U-698-M whole cell lysate: sc-364799, Daudi cell lysate: sc-2415 or GA-10 whole cell lysate: sc-364230.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



PLC γ 2 (B-10): sc-5283. Western blot analysis of PLC γ 2 expression in Ramos (A), U-698-M (B), Daudi (C) and GA-10 (D) whole cell lysates.

SELECT PRODUCT CITATIONS

- Nakamura, I., et al. 2001. Convergence of $\alpha_v\beta_3$ integrin- and macrophage colony stimulating factor-mediated signals on phospholipase C γ in perfusion osteoclasts. *J. Cell Biol.* 152: 361-373.
- Baek, J.M., et al. 2017. Nicotinamide phosphoribosyltransferase inhibits receptor activator of nuclear factor- κ B ligand-induced osteoclast differentiation *in vitro*. *Mol. Med. Rep.* 15: 784-792.
- Barrachina, M.N., et al. 2018. GPVI surface expression and signalling pathway activation are increased in platelets from obese patients: elucidating potential anti-atherothrombotic targets in obesity. *Atherosclerosis* 281: 62-70.
- Arora, H., et al. 2019. The ATP-binding cassette gene ABCF1 functions as an E2 ubiquitin-conjugating enzyme controlling macrophage polarization to dampen lethal septic shock. *Immunity* 50: 418-431.e6.
- Martín-Nalda, A., et al. 2020. Severe autoinflammatory manifestations and antibody deficiency due to novel hypermorphic PLCG2 mutations. *J. Clin. Immunol.* 40: 987-1000.
- Maguire, E., et al. 2021. PIP2 depletion and altered endocytosis caused by expression of Alzheimer's disease-protective variant PLC γ 2 R522. *EMBO J.* 40: e105603.
- Rah, S.Y., et al. 2023. CD38/ADP-ribose/TRPM2-mediated nuclear Ca²⁺ signaling is essential for hepatic gluconeogenesis in fasting and diabetes. *Exp. Mol. Med.* 55: 1492-1505.
- Bunney, T.D., et al. 2024. Characterisation of molecular mechanisms for PLC γ 2 disease-linked variants. *Adv. Biol. Regul.* 94: 101053.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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