

PLC ζ (C-12): sc-131752

BACKGROUND

Phosphoinositide-specific phospholipase C (PLC) plays a crucial 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, PLC ζ . PLC ζ (phospholipase C- ζ -1), also known as 1-phosphatidylinositol-4,5-bisphosphate phosphodiesterase ζ -1 and Testis-development protein NYD-SP27, is a 608 amino acid protein that triggers intracellular calcium oscillations in oocytes solely during M phase and may be the molecular trigger for egg activation during fertilization. Upon nuclear envelope breakdown for mitosis, PLC ζ localizes from the pronucleus to the cytoplasm and then localizes again to the pronucleus at interphase following meiosis and mitosis. There are three isoforms of PLC ζ that are produced as a result of alternative splicing events.

REFERENCES

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- Choi, Y.H., et al. 2009. Effect of sperm extract injection volume, injection of PLC ζ cRNA, and tissue cell line on efficiency of equine nuclear transfer. *Cloning Stem Cells* 11: 301-308.
- Young, C., et al. 2009. Phospholipase C ζ undergoes dynamic changes in its pattern of localization in sperm during capacitation and the acrosome reaction. *Fertil. Steril.* 91: 2230-2242.

CHROMOSOMAL LOCATION

Genetic locus: PLCZ1 (human) mapping to 12p12.3.

SOURCE

PLC ζ (C-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of PLC ζ of human origin.

RESEARCH USE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-131752 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PLC ζ (C-12) is recommended for detection of PLC ζ of 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with other PLC family members.

PLC ζ (C-12) is also recommended for detection of PLC ζ in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for PLC ζ siRNA (h): sc-95901, PLC ζ shRNA Plasmid (h): sc-95901-SH and PLC ζ shRNA (h) Lentiviral Particles: sc-95901-V.

Molecular Weight of PLC ζ : 70 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

- Kasimanickam, V., et al. 2012. Association between mRNA abundance of functional sperm function proteins and fertility of Holstein bulls. *Theriogenology* 78: 2007-2019.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.