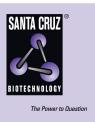
# SANTA CRUZ BIOTECHNOLOGY, INC.

# PLC δ4 (Q-15): sc-30830



#### 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 (IP3) and diacylglycerol (DAG) from phosphatidylinositol 4,5-bisphosphate. There are several mammalian PLC proteins, including PLC B1, PLC B2, PLC B3, PLC B4, PLCy1, PLCy2, PLC &1, PLC &3, PLC &4 and PLCe. PLC &1, a calcium signal amplifier, is activated by an atypical GTP-binding protein and functions as an effector for GTP-binding protein transglutaminase II-mediated oxytocin receptor and  $\alpha$ 1B-adrenoreceptor signaling. PLC  $\delta$ 1 is highly expressed in brain, heart, lung and testis and is abnormally accumulated in autopsied brains with Alzheimer's disease (AD), suggesting that it may play a role in the pathology of AD. Both PLC &3 and PLC &4 contain several functional domains through which they bind calcium as a cofactor and catalyze the creation of DAG and IP3, playing an essential role in signal transduction. PLC 84 is highly expressed in skeletal muscle and kidney tissue, as well as in corneal epithelial cells, suggesting a role in the regulation of kidney and ocular function.

# REFERENCES

- Lee, K.H., et al. 1995. Evidence suggesting a role for phospholipase C isozyme, PLC δ1 in corticomedullary osmotic gradients in rat kidneys. Biochem. Mol. Biol. Int. 37: 25-31.
- Liu N., et al. 1996. A new phospholipase C δ4 is induced at S phase of the cell cycle and appears in the nucleus. J. Biol. Chem. 1: 355-360.
- 3. Lee, K.H., et al. 1997. Attenuation of renomedullary phospholipase C isozyme, PLC  $\delta$ 1, in spontaneously hypertensive rats. Biochem. Mol. Biol. Int. 43: 741-747.
- Matecki, A., et al. 1997. Effect of sphingomyelin and its metabolites on the activity of human recombinant PLC δ1. Int. J. Biochem. Cell Biol. 29: 815-828.
- Tachibana T., et al. 2002. Analysis of gene expression following spinal cord injury in rat using complementary DNA microarray. Neurosci. Lett. 327: 133-137.
- 6. Leung, D.W., et al. 2004. Phospholipase C  $\delta$ 4 overexpression upregulates ErbB1/2 expression, Erk signaling pathway, and proliferation in MCF-7 cells. Mol. Cancer 3: 15.

#### CHROMOSOMAL LOCATION

Genetic locus: PLCD4 (human) mapping to 2q35; Plcd4 (mouse) mapping to 1 C3.

## SOURCE

PLC  $\delta4$  (Q-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of PLC  $\delta4$  of human origin.

#### **STORAGE**

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

#### PRODUCT

Each vial contains 200  $\mu g$  lgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-30830 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

# **APPLICATIONS**

PLC  $\delta4$  (Q-15) is recommended for detection of PLC  $\delta4$  of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

PLC  $\delta4$  (Q-15) is also recommended for detection of PLC  $\delta4$  in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PLC  $\delta4$  siRNA (h): sc-45853, PLC  $\delta4$  siRNA (m): sc-45854, PLC  $\delta4$  shRNA Plasmid (h): sc-45853-SH, PLC  $\delta4$  shRNA Plasmid (m): sc-45854-SH, PLC  $\delta4$  shRNA (h) Lentiviral Particles: sc-45853-V and PLC  $\delta4$  shRNA (m) Lentiviral Particles: sc-45854-V.

Molecular Weight of PLC 84: 90 kDa.

Molecular Weight of PLC 84 testis specific form: 93 kDa.

Positive Controls: Rat testis extract: sc-2400.

#### **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) Immunofluo-rescence: 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.

# **RESEARCH USE**

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

#### PROTOCOLS

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