

PIPK II (D-3): sc-393246

BACKGROUND

Phosphatidylinositol phosphate kinases (PIPKs) synthesize phosphatidylinositol-4,5-bisphosphate, which regulates various processes including cell proliferation, survival, membrane trafficking and cytoskeletal organization. The PIPK family is divided into three different classes, designated type I, type II and type III, each of which contain an activation loop, which determines their enzymatic specificity and subcellular targeting. The type I PIPKs (PIPK I) consist of PIPK I α , β and γ , while the type II PIPKs (PIPK II) consist of PIPK II α and β , both of which exhibit high levels of expression in the brain. Type III PIPK (designated PIP5K III) localizes to the endosome membrane where it participates in endosome-related membrane trafficking and, like other PIPK proteins, generates phosphatidylinositol-4,5-bisphosphate via ATP-dependent phosphorylation. Due to their ability to regulate phosphatidylinositol-4,5-bisphosphate production, the PIPK proteins are essential messengers for signal transduction pathways throughout the body.

REFERENCES

1. Carricaburu, V., et al. 2003. The phosphatidylinositol (PI)-5-phosphate 4-kinase type II enzyme controls Insulin signaling by regulating PI-3,4,5-trisphosphate degradation. *Proc. Natl. Acad. Sci. USA* 100: 9867-9872.
2. Cabezas, A., et al. 2006. Cloning and subcellular localization of a human phosphatidylinositol 3-phosphate 5-kinase, PIKfyve/Fab1. *Gene* 371: 34-41.
3. Rutherford, A.C., et al. 2006. The mammalian phosphatidylinositol 3-phosphate 5-kinase (PIKfyve) regulates endosome-to-TGN retrograde transport. *J. Cell Sci.* 119: 3944-3957.
4. Clarke, J.H., et al. 2007. Type II PtdInsP kinases: location, regulation and function. *Biochem. Soc. Symp.* 74: 149-159.
5. Karataeva, N.A. and Nevinsky, G.A. 2007. Enzymes phosphorylating lipids and polysaccharides. *Biochemistry* 72: 367-379.

CHROMOSOMAL LOCATION

Genetic locus: PIP4K2A (human) mapping to 10p12.2; Pip4k2a (mouse) mapping to 2 A3.

SOURCE

PIPK II (D-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-27 at the N-terminus of PIPK II/III of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-393246 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

PIPK II (D-3) is recommended for detection of PIPK II α of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

PIPK II (D-3) is also recommended for detection of PIPK II α in additional species, including canine and porcine.

Suitable for use as control antibody for PIPK II α siRNA (h): sc-39139, PIPK II α siRNA (m): sc-155934, PIPK II α shRNA Plasmid (h): sc-39139-SH, PIPK II α shRNA Plasmid (m): sc-155934-SH, PIPK II α shRNA (h) Lentiviral Particles: sc-39139-V and PIPK II α shRNA (m) Lentiviral Particles: sc-155934-V.

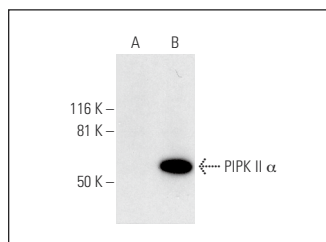
Molecular Weight of PIPK II: 47-53 kDa.

Positive Controls: PIPK II α (m): 293T Lysate: sc-127337.

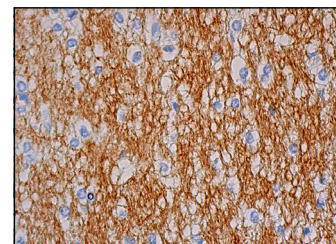
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohisto-mount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



PIPK II (D-3): sc-393246. Western blot analysis of PIPK II α expression in non-transfected: sc-117752 (A) and mouse PIPK II α transfected: sc-127337 (B) 293T whole cell lysates.



PIPK II (D-3): sc-393246. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex tissue showing neuropil staining.

RESEARCH USE

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