

PIPK I α (D-4): sc-515416

BACKGROUND

Phosphatidylinositol-4-phosphate-5-kinase (PIPK) synthesizes phosphatidylinositol-4,5-bisphosphate, which regulates various processes including cell proliferation, survival, membrane trafficking, and cytoskeletal organization. The PIPK family is divided into type I, type II and type III. Each type of the PIPK family phosphorylate distinct substrates and they contain an activation loop, which determines their enzymatic specificity and subcellular targeting. The phosphatidylinositol-4-phosphate-5-kinase type I consists of three members, PIPK I α , β , and γ , which are characterized by phosphorylating PI4P on the 5-hydroxyl. PIPK I α (designated PIPK I β in mouse) is expressed in brain tissue. PIPK I β , designated PIPK I α in mouse, is also called STM7. PIPK I γ has two variants produced by alternative splicing expressed in lung, brain, and kidneys.

REFERENCES

1. Divecha, N., et al. 1995. The cloning and sequence of the C isoform of PtdIns4P 5-kinase. *Biochem. J.* 309: 715-719.
2. Loijens, J.C., et al. 1996. Type I phosphatidylinositol-4-phosphate 5-kinases are distinct members of this novel lipid kinase family. *J. Biol. Chem.* 271: 32937-32943.
3. Ishihara, H., et al. 1998. Type I phosphatidylinositol-4-phosphate 5-kinases. Cloning of the third isoform and deletion/substitution analysis of members of this novel lipid kinase family. *J. Biol. Chem.* 273: 8741-8748.
4. Tolia, K.F., et al. 1998. Type I phosphatidylinositol-4-phosphate 5-kinases synthesize the novel lipids phosphatidylinositol 3,5-bisphosphate and phosphatidylinositol 5-phosphate. *J. Biol. Chem.* 273: 18040-18046.
5. Rao, V.D., et al. 1998. Structure of Type II β phosphatidylinositol phosphate kinase: a protein kinase fold flattened for interfacial phosphorylation. *Cell* 94: 829-839.
6. Kunz, J., et al. 2000. The activation loop of phosphatidylinositol phosphate kinases determines signaling specificity. *Mol. Cell* 5: 1-11.
7. Itoh, T., et al. 2000. Autophosphorylation of type I phosphatidylinositol phosphate kinase regulates its lipid kinase activity. *J. Biol. Chem.* 275: 19389-19394.

CHROMOSOMAL LOCATION

Genetic locus: PIP5K1A (human) mapping to 1q21.3.

SOURCE

PIPK I α (D-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 7-31 at the N-terminus of PIPK I α of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} 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-515416 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

PIPK I α (D-4) is recommended for detection of PIPK I α of 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PIPK I α siRNA (h): sc-36232, PIPK I α shRNA Plasmid (h): sc-36232-SH and PIPK I α shRNA (h) Lentiviral Particles: sc-36232-V.

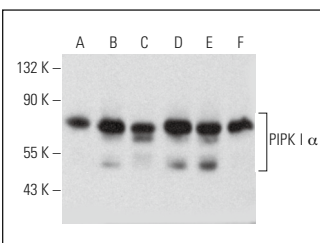
Molecular Weight of PIPK I α : 68 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, RT-4 whole cell lysate: sc-364257 or THP-1 cell lysate: sc-2238.

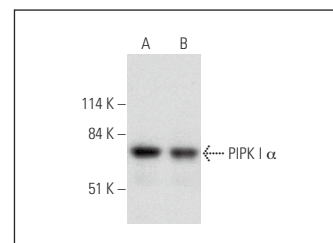
RECOMMENDED SUPPORT REAGENTS

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 A/G PLUS-Agarose: sc-2003 (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.

DATA



PIPK I α (D-4): sc-515416. Western blot analysis of PIPK I α expression in K-562 (A), NCI-H1299 (B), RT-4 (C), U-251-MG (D), Hep G2 (E) and MDA-MB-231 (F) whole cell lysates.



PIPK I α (D-4): sc-515416. Western blot analysis of PIPK I α expression in K-562 (A) and THP-1 (B) whole cell lysates.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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