

PIPK I γ (12): sc-136033

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. 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.
4. Rao, V.D., et al. 1998. Structure of Type IIb phosphatidylinositol phosphate kinase: a protein kinase fold flattened for interfacial phosphorylation. *Cell* 94: 829-839.
5. 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.
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: Pip5k1c (mouse) mapping to 10 C1.

SOURCE

PIPK I γ (12) is a mouse monoclonal antibody raised against amino acids 479-580 of PIPK I γ of mouse origin.

PRODUCT

Each vial contains 50 μ g IgG₁ in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

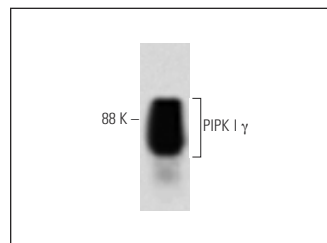
PIPK I γ (12) is recommended for detection of PIPK I γ of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for PIPK I γ siRNA (m): sc-39138, PIPK I γ shRNA Plasmid (m): sc-39138-SH and PIPK I γ shRNA (m) Lentiviral Particles: sc-39138-V.

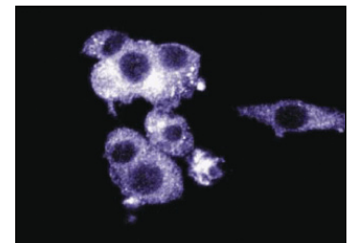
Molecular Weight of PIPK I γ alternative splicing forms: 87/90 kDa.

Positive Controls: rat cerebrum tissue extract, mouse brain extract: sc-2253 or rat brain extract: sc-2392.

DATA



PIPK I γ (12): sc-136033. Western blot analysis of PIPK I γ expression in rat cerebrum tissue extract.



PIPK I γ (12): sc-136033. Immunofluorescence staining of PC-12 cells showing cytoplasmic staining.

RESEARCH USE

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

PROTOCOLS

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