SANTA CRUZ BIOTECHNOLOGY, INC.

PIPK I β (N-17): sc-11777

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The Power to Question

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 a in mouse, is also called STM7. PIPK I γ has two variants produced by alternative splicing which are 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. Tolias, 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 IIβ 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: PIP5K1B (human) mapping to 9q21.11; Pip5k1b (mouse) mapping to 19 B.

SOURCE

PIPK I β (N-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of PIPK I β of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-11777 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PIPK I β (N-17) is recommended for detection of PIPK I β (designated PIPK I α in mouse) 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).

PIPK I β (N-17) is also recommended for detection of PIPK I β (designated PIPK I α in mouse) in additional species, including equine, canine and bovine.

Suitable for use as control antibody for PIPK I β siRNA (h): sc-39135, PIPK I β siRNA (m): sc-39136, PIPK I β shRNA Plasmid (h): sc-39135-SH, PIPK I β shRNA Plasmid (m): sc-39136-SH, PIPK I β shRNA (h) Lentiviral Particles: sc-39135-V and PIPK I β shRNA (m) Lentiviral Particles: sc-39136-V.

Molecular Weight of PIPK I β: 68 kDa.

Positive Controls: K-562 whole cell cysate: sc-2203, mouse brain extract: sc-2253 or mouse testis extract: sc-2405.

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) 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

1. Halstead, J.R., et al. 2009. Assaying endogenous phosphatidylinositol-4-phosphate 5-kinase (PIP5K) activities. Methods Mol. Biol. 462: 391-402.

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 or our catalog for detailed protocols and support products.