SANTA CRUZ BIOTECHNOLOGY, INC.

PIPK I α (D-12): sc-377021

SANTA CRUZ BIOTECHNOLOGY

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 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. 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.

CHROMOSOMAL LOCATION

Genetic locus: PIP5K1A (human) mapping to 1q21.3; Pip5k1a (mouse) mapping to 3 F2.1.

SOURCE

PIPK I α (D-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 481-519 near the C-terminus of PIPK I α of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PIPK I α (D-12) is available conjugated to agarose (sc-377021 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-377021 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377021 PE), fluorescein (sc-377021 FITC), Alexa Fluor® 488 (sc-377021 AF488), Alexa Fluor® 546 (sc-377021 AF546), Alexa Fluor® 594 (sc-377021 AF594) or Alexa Fluor® 647 (sc-377021 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377021 AF680) or Alexa Fluor® 790 (sc-377021 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-377021 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

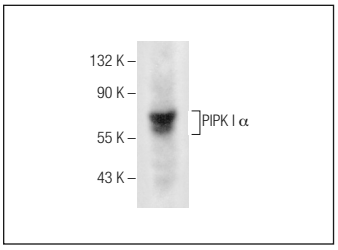
PIPK I α (D-12) is recommended for detection of PIPK I α (designated PIPK I β in mouse) of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting 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).

Suitable for use as control antibody for PIPK I α siRNA (h): sc-36232, PIPK I α siRNA (m): sc-36233, PIPK I α shRNA Plasmid (h): sc-36232-SH, PIPK I α shRNA Plasmid (m): sc-36233-SH, PIPK I α shRNA (h) Lentiviral Particles: sc-36232-V and PIPK I α shRNA (m) Lentiviral Particles: sc-36233-V.

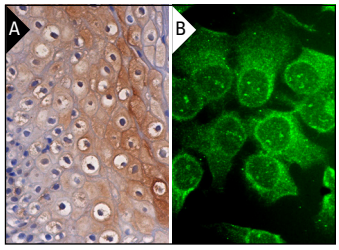
Molecular Weight of PIPK I α: 68 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, NAMALWA cell lysate: sc-2234 or K-562 whole cell lysate: sc-2203.

DATA



PIPK I α (D-12): sc-377021. Western blot analysis of PIPK I α expression in NAMALWA whole cell lysate.



PIPK I α (D-12): sc-377021. Immunoperoxidase staining of formalin fixed, paraffin-embedded human tonsil tissue showing cytoplasmic staining of squamous epithelial cells (**A**). Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and nuclear speckles localization (**B**).

SELECT PRODUCT CITATIONS

1. Faria, M., et al. 2021. Analysis of NIS plasma membrane interactors discloses key regulation by a SRC/RAC1/PAK1/PIP5K/EZRIN pathway with potential implications for radioiodine re-sensitization therapy in thyroid cancer. Cancers 13: 5460.

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.