

PIP5KIII (64-Q6): sc-100408

BACKGROUND

Phosphorylation of phosphatidylinositol (PtdIns) derivatives is suggested to play a role in regulating cytoskeletal functions, membrane trafficking and receptor signaling by recruiting protein complexes to cell- and endosomal-membranes. PtdIns proteins are distinguished by the degree and position of phosphorylation of the inositol ring. PIP5KIII (phosphatidylinositol 3-phosphate 5-kinase), also known as PIP5K3, FAB1, CFD, PIKFYVE or ZFYVE29 is 2,098 amino acid protein that synthesizes phosphatidylinositol-3,5-bisphosphate by catalyzing the phosphorylation of phosphatidylinositol 3-phosphate on the fifth hydroxyl of the inositol ring. PIP5KIII is thought to play a major role in nuclear migration and the endocytic-vacuolar pathway. PIP5KIII exists as four alternatively spliced isoforms and contains a DEP domain, a FYVE-type zinc finger and a PIPK domain. Defects in the gene encoding PIP5KIII lead to corneal fleck dystrophy (CFD), an autosomal disorder in which small white flecks are found throughout the corneal stroma.

CHROMOSOMAL LOCATION

Genetic locus: PIKFYVE (human) mapping to 2q34; Pikfyve (mouse) mapping to 1 C2.

SOURCE

PIP5KIII (64-Q6) is a mouse monoclonal antibody raised against amino acids 342-451 mapping within an internal region of PIP5KIII of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 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.

RESEARCH USE

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

APPLICATIONS

PIP5KIII (64-Q6) is recommended for detection of PIP5KIII of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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 PIP5K III siRNA (h): sc-39142, PIP5KIII siRNA (m): sc-72205, PIP5K III shRNA Plasmid (h): sc-39142-SH, PIP5KIII shRNA Plasmid (m): sc-72205-SH, PIP5K III shRNA (h) Lentiviral Particles: sc-39142-V and PIP5KIII shRNA (m) Lentiviral Particles: sc-72205-V.

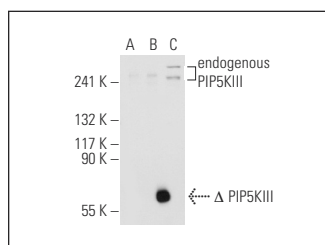
Molecular Weight of PIP5KIII: 262 kDa.

Positive Controls: PIP5KIII (h): 293T Lysate: sc-114873 or HeLa whole cell lysate: sc-2200.

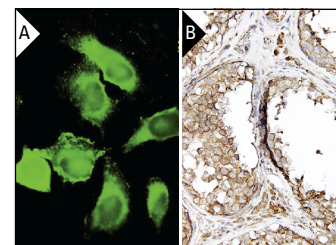
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



PIP5KIII (64-Q6): sc-100408. Western blot analysis of PIP5KIII expression in non-transfected 293T, sc-117752 (A), truncated human PIP5KIII transfected 293T: sc-114873 (B) and HeLa (C) whole cell lysates.



PIP5KIII (64-Q6): sc-100408. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells (A). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human testis tissue showing membrane and cytoplasmic localization (B).

SELECT PRODUCT CITATIONS

- Dupuis-Coronas, S., et al. 2011. The nucleophosmin-anaplastic lymphoma kinase oncogene interacts, activates, and uses the kinase PIKFyve to increase invasiveness. *J. Biol. Chem.* 286: 32105-32114.
- Li, J., et al. 2015. A microRNA signature in gestational diabetes mellitus associated with risk of macrosomia. *Cell. Physiol. Biochem.* 37: 243-352.
- Dutta, S., et al. 2016. Neuropilin-2 regulates endosome maturation and EGFR trafficking to support cancer cell pathobiology. *Cancer Res.* 76: 418-428.
- Mohamud, Y., et al. 2020. Coxsackievirus infection induces a non-canonical autophagy independent of the ULK and PI3K complexes. *Sci. Rep.* 10: 19068.
- Cantarero, L., et al. 2021. Mitochondria-lysosome membrane contacts are defective in GDAP1-related Charcot-Marie-Tooth disease. *Hum. Mol. Genet.* 29: 3589-3605.
- O'Connell, C.E. and Vassilev, A. 2021. Combined inhibition of p38MAPK and PIKFyve synergistically disrupts autophagy to selectively target cancer cells. *Cancer Res.* E-published.

PROTOCOLS

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