SANTA CRUZ BIOTECHNOLOGY, INC.

PIP5KIII (P-20): sc-83847

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

REFERENCES

1. Sbrissa, D., et al. 2002. Phosphatidylinositol 3-phosphate-interacting domains in PIKfyve. Binding specificity and role in PIKfyve. Endomenbrane localization. J. Biol. Chem. 277: 6073-6079.
2. Ikonomov, O.C., et al. 2003. PIKfyve controls fluid phase endocytosis but not recycling/degradation of endocytosed receptors or sorting of procathepsin D by regulating multivesicular body morphogenesis. Mol. Biol. Cell 14: 4581-4591.
3. Rutherford, A.C., et al. 2006. The mammalian phosphatidylinositol 3-phosphate 5-kinase (PIKfyve) regulates endosome-to-TGN retrograde transport. J. Cell Sci. 119: 3944-3957.
4. Kim, J., et al. 2007. The phosphoinositide kinase PIKfyve mediates epidermal growth factor receptor trafficking to the nucleus. Cancer Res. 67: 9229-9237.
5. Shisheva, A., et al. 2008. PIKfyve: Partners, significance, debates and paradoxes. Cell Biol. Int. 32: 591-604.
6. Coronas, S., et al. 2008. Elevated levels of PtdIns5P in NPM-ALK transformed cells: implication of PIKfyve. Biochem. Biophys. Res. Commun. 372: 351-355.

CHROMOSOMAL LOCATION

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

SOURCE

PIP5KIII (P-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PIP5KIII 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-83847 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PIP5KIII (P-20) 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), 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).

PIP5KIII (P-20) is also recommended for detection of PIP5KIII in additional species, including equine, canine, bovine, porcine and avian.

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: HeLa whole cell lysate: sc-2200.

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.

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.