SANTA CRUZ BIOTECHNOLOGY, INC.

PIPK II/III (C-18): sc-1329

BACKGROUND

The members of the phosphatidylinositol kinase (PIK) superfamily can be divided into three groups based on their substrate specificity. PIKs convert phosphatidylinositol (PI) into PI phosphate [PI(3)P], PI phosphate [PI(4)P], PI bisphosphate [PI(4,5)P2] and PI triphosphate [PI(3,4,5)P3]. The first group, the PI 3-kinases, is composed of highly related proteins designated p110α, p110β, p110γ and p110δ which convert PI into PI(3)P and PI(4,5)P2 into PI(3,4,5)P3. The second group, the PI 4-kinases, convert PI into PI(4)P. The third group, the PI(4)P5-kinases, convert PI(4)P into PI(4,5)P2. Phosphatidylinositides represent important regulatory molecules and are involved in a diverse array of signaling pathways. Phosphatidylinositol biphosphate acts as an activator of PKCs and as a substrate for PLC γ, which converts the molecule into the second messengers, inositol-1,4,5 triphosphate and 1,2-diacylglycerol. PI(3,4,5)P3 has been shown to activate the PKC ζ isoform. Wortmannin, originally described as a specific inhibitor of PI 3-kinases, may actually be a broad spectrum inhibitor of PI kinase activity.

REFERENCES

1. Hara, K., et al. 1994. 1-phosphatidylinositol 3-kinase activity is required for Insulin-stimulated glucose transport but not for RAS activation in CHO cells. Proc. Natl. Acad. Sci. USA 91: 7415-7419.
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3. Stephens, L., et al. 1994. A novel phosphatidylinositol 3 kinase activity in myeloid-derived cells is activated by G protein βγ subunits. Cell 77: 83-93.
4. Woscholski, R., et al. 1994. Biochemical characterization of the free catalytic p110α and the complexed heterodimeric p110α.p85α forms of the mammalian phosphatidylinositol 3-kinase. J. Biol. Chem. 269: 25067-25072.
5. Woscholski, R, et al. 1994. A comparison of demethoxyviridin and wortmannin as inhibitors of phosphatidylinositol 3-kinase. FEBS Lett. 342: 109-114.
6. Hunter, T. 1995. When is a lipid kinase not a lipid kinase? When it is a protein kinase. Cell 83: 1-4.
7. Zhou, K., et al. 1995. A phosphatidylinositol (PI) kinase gene family in Dictyostelium discoideum: biological roles of putative mammalian p110 and yeast Vps34p PI 3-kinase homologs during growth and development. Mol. Cell. Biol. 15: 5645-5656.

CHROMOSOMAL LOCATION

Genetic locus: PIP5K1C (human) mapping to 19p13.3; Pip5k1c (mouse) mapping to 10 C1.

SOURCE

PIPK II/III (C-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of PIPK II/III of human origin.

RESEARCH USE

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

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-1329 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

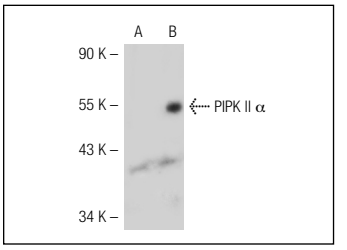
APPLICATIONS

PIPK II/III (C-18) is recommended for detection of PIPK IIα, PIPK IIβ and PIPK III of 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

DATA



PIPK II/III (C-18): sc-1329. Western blot analysis of PIPK II α expression in non-transfected: sc-117752 (**A**) and mouse PIPK II α transfected: sc-127337 (**B**) 293T whole cell lysates.

STORAGE

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

PROTOCOLS

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