

PI 4-kinase α (C-20): sc-1327

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 p110 α , p110 β , p110 γ and p110 δ 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

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- Woscholski, R., et al. 1994. A comparison of demethoxyviridin and wortmannin as inhibitors of phosphatidylinositol 3-kinase. *FEBS Lett.* 342: 109-114.
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- 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: PI4KA (human) mapping to 22q11.21; Pi4ka (mouse) mapping to 16 A3.

SOURCE

PI 4-kinase α (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of PI 4-kinase α of human origin.

STORAGE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-1327 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PI 4-kinase α (C-20) is recommended for detection of PI 4-kinase α 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).

PI 4-kinase α (C-20) is also recommended for detection of PI 4-kinase α in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PI 4-kinase α siRNA (h): sc-44012, PI 4-kinase α siRNA (m): sc-39134, PI 4-kinase α shRNA Plasmid (h): sc-44012-SH, PI 4-kinase α shRNA Plasmid (m): sc-39134-SH, PI 4-kinase α shRNA (h) Lentiviral Particles: sc-44012-V and PI 4-kinase α shRNA (m) Lentiviral Particles: sc-39134-V.

Molecular Weight of PI 4-kinase α isoforms: 97/43 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209.

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

- Ekblad, L., et al. 2001. Localization of phosphatidylinositol 4-kinase iso-enzymes in rat liver plasma membrane domains. *Biochim. Biophys. Acta* 1531: 209-221.
- Abidinpour, P., et al. 2003. Isolation of a caveolae-enriched fraction from rat lung by affinity partitioning and sucrose gradient centrifugation. *Anal. Biochem.* 313: 1-8.

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.