

PI 4-kinase α (H-142): sc-10799

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

- 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.
- Roche, S., et al. 1994. The phosphatidylinositol 3-kinase a is required for DNA synthesis induced by some, but not all, growth factors. *Proc. Natl. Acad. Sci. USA* 91: 9185-9189.
- Stephens, L., et al. 1994. A novel phosphatidylinositol 3-kinase activity in myeloid-derived cells is activated by G protein $\beta\gamma$ subunits. *Cell* 77: 83-93.
- Woscholski, R., et al. 1994. Biochemical characterization of the free catalytic p110 α and the complexed heterodimeric p110 α p85 α forms of the mammalian phosphatidylinositol 3-kinase. *J. Biol. Chem.* 269: 25067-25072.
- Woscholski, R., et al. 1994. A comparison of demethoxyviridin and Wortmannin as inhibitors of phosphatidylinositol 3-kinase. *FEBS Lett.* 342: 109-114.

CHROMOSOMAL LOCATION

Genetic locus: PIK4CA (human) mapping to 22q11.21; Pik4ca (mouse) mapping to 16 A3.

SOURCE

PI 4-kinase α (H-142) is a rabbit polyclonal antibody raised against amino acids 1300-1441 mapping within an internal region of PI 4-kinase α of human origin.

PRODUCT

Each vial contains 200 μ g IgG 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.

APPLICATIONS

PI 4-kinase α (H-142) 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), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence and 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).

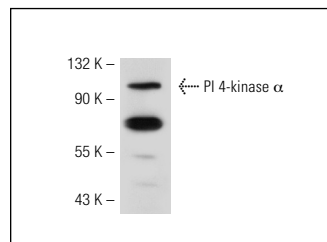
PI 4-kinase α (H-142) is also recommended for detection of PI 4-kinase α in additional species, including equine and canine.

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.

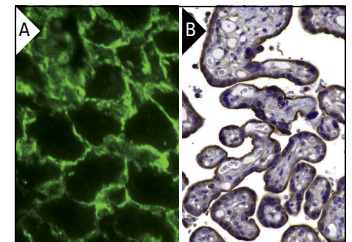
Molecular Weight of PI 4-kinase α isoforms: 97/43 kDa.

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

DATA



PI 4-kinase α (H-142): sc-10799. Western blot analysis of PI 4-kinase α expression in HL-60 whole cell lysates.



PI 4-kinase α (H-142): sc-10799. Immunofluorescence staining of normal mouse liver frozen section showing membrane and cytoplasmic staining (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic staining of trophoblastic cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (B).

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.