

PI 3-kinase C2 α (N-15): sc-48639

BACKGROUND

Phosphatidylinositol 3-kinases (PI3Ks) phosphorylate the 3' OH position of the inositol ring of inositol lipids. Human PI 3-kinase C2 α (PIK3C2A, C2-containing phosphatidylinositol kinase, p110 α or CPK) contains a C-terminal calcium-binding and phospholipid-binding module known as the C2 domain. The cDNA sequence of PI 3-kinase C2 α predicts a 1,686-amino acid protein that is 90% identical to mouse Cpk (term for the *Drosophila* homolog). Northern blot analysis reveals that PI 3-kinase C2 α is expressed as an 8 kb mRNA in a wide variety of tissues. *In vitro*, the PI 3-kinase C2 α enzyme can phosphorylate phosphatidylinositol and phosphatidylinositol-4-phosphate. The PI 3-kinase C2 α gene contains 32 exons and spans approximately 76 kb.

REFERENCES

- Molz, L., et al. 1996. Cpk is a novel class of *Drosophila* PtdIns 3-kinase containing a C2 domain. *J. Biol. Chem.* 271: 13892-13899.
- Domin, J., et al. 1997. Cloning of a human phosphoinositide 3-kinase with a C2 domain that displays reduced sensitivity to the inhibitor Wortmannin. *Biochem. J.* 326: 139-147.
- Caldwell, G.M., et al. 2001. Mapping of genes and transcribed sequences in a gene rich 400 kb region on human chromosome 11p15.1→p14. *Cytogenet. Cell Genet.* 92: 103-107.
- Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 603601. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Zheleznova, N.N., et al. 2003. The role of phosphatidylinositol 3-kinases p85/p110 and hVPS34 in endocytosis of EGF-receptor complexes. *Tsitologiya* 45: 574-581.
- Kang, S., et al. 2005. Suppression of the α isoform of class II phosphoinositide 3-kinase gene expression leads to apoptotic cell death. *Biochem. Biophys. Res. Commun.* 329: 6-10.
- Shepherd, P.R. 2005. Mechanisms regulating phosphoinositide 3-kinase signalling in Insulin-sensitive tissues. *Acta Physiol. Scand.* 183: 3-12.
- Zhao, J.J., et al. 2005. The oncogenic properties of mutant p110 α and p110 β phosphatidylinositol 3-kinases in human mammary epithelial cells. *Proc. Natl. Acad. Sci. USA* 102: 18443-18448.
- Brown, J.K., et al. 2006. Tryptase activates phosphatidylinositol 3-kinases proteolytically independently from proteinase-activated receptor-2 in cultured dog airway smooth muscle cells. *Am. J. Physiol. Lung Cell Mol. Physiol.* 290: L259-269.

CHROMOSOMAL LOCATION

Genetic locus: PIK3C2A (human) mapping to 11p15.1; Pik3c2a (mouse) mapping to 7 F1.

SOURCE

PI 3-kinase C2 α (N-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of PI 3-kinase C2 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.

Blocking peptide available for competition studies, sc-48639 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PI 3-kinase C2 α (N-15) is recommended for detection of PI 3-kinase C2 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 3-kinase C2 α (N-15) is also recommended for detection of PI 3-kinase C2 α in additional species, including equine, canine and bovine.

Suitable for use as control antibody for PI 3-kinase C2 α siRNA (h): sc-61340, PI 3-kinase C2 α siRNA (m): sc-61341, PI 3-kinase C2 α shRNA Plasmid (h): sc-61340-SH, PI 3-kinase C2 α shRNA Plasmid (m): sc-61341-SH, PI 3-kinase C2 α shRNA (h) Lentiviral Particles: sc-61340-V and PI 3-kinase C2 α shRNA (m) Lentiviral Particles: sc-61341-V.

Molecular Weight of PI-3 kinase C2 α : 190 kDa.

Positive Controls: rat brain extract: sc-2392.

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.



Try **PI 3-kinase C2 α (G-5): sc-365290** or **PI 3-kinase C2 α (17): sc-136298**, our highly recommended monoclonal alternatives to PI 3-kinase C2 α (N-15).