SANTA CRUZ BIOTECHNOLOGY, INC.

PI 3-kinase C2α siRNA (h): sc-61340

BACKGROUND

Phosphatidylinositol 3-kinases (PI3Ks) phosphorylate the 3' OH position of the inositol ring of inositol lipids. Human PI 3-kinase C2α (PIK3C2A, C2-containing phosphatidylinositol kinase, p110α or CPK) contains a C-terminal calcium-binding and phospholipid-binding module known as the C2 domain. The cDNA sequence of PI 3-kinase C2α 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 C2α is expressed as an 8 kb mRNA in a wide variety of tissues. *In vitro,* the PI 3-kinase C2α enzyme can phosphorylate phospha-tidylinositol and phosphatidylinositol-4-phosphate. The PI 3-kinase C2α gene contains 32 exons and spans approximately 76 kb.

REFERENCES

1. 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.
2. 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.
3. 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.
4. 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/

CHROMOSOMAL LOCATION

Genetic locus: PIK3C2A (human) mapping to 11p15.1.

PRODUCT

PI 3-kinase C2α siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PI 3-kinase C2α shRNA Plasmid (h): sc-61340-SH and PI 3-kinase C2α shRNA (h) Lentiviral Particles: sc-61340-V as alternate gene silencing products.

For independent verification of PI 3-kinase C2α (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-61340A, sc-61340B and sc-61340C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

PI 3-kinase C2α siRNA (h) is recommended for the inhibition of PI 3-kinase C2α expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

PI 3-kinase C2α (G-5): sc-365290 is recommended as a control antibody for monitoring of PI 3-kinase C2α gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PI 3-kinase C2α gene expression knockdown using RT-PCR Primer: PI 3-kinase C2α (h)-PR: sc-61340-PR (20 µl, 301 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Zhang, C., et al. 2019. Inhibitory effects of octreotide on the progression of hepatic fibrosis via the regulation of Bcl-2/Bax and PI3K/Akt signaling pathways. Int. Immunopharmacol. 73: 515-526.

RESEARCH USE

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

PROTOCOLS

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