



PI 3-kinase p110 δ siRNA (h2): sc-270137

BACKGROUND

Phosphatidylinositol 3-kinase (PI 3-kinase) is composed of p85 and p110 subunits. p85 lacks PI 3-kinase activity and acts as an adapter, coupling p110 to activated protein tyrosine kinase. Two forms of p85 have been described (p85 α and p85 β), each possessing one SH3 and two SH2 domains. Various p110 forms have been identified. p110 α and p110 β interact with p85 α , and p110 α has also been shown to interact with p85 β *in vitro*. It has been shown to bind p85 α and β , but it apparently does not phosphorylate these subunits. p110 δ has the capacity to autophosphorylate and results in the nearly complete inactivation of the lipid kinase activity. Interestingly, p110 γ does not interact with the p85 subunits and has been shown to be activated by α and β heterotrimeric G proteins. Two p110 δ isoforms have been identified and are widely expressed. Isoform 1 is expressed predominantly in leukocytes while isoform 2 is expressed in normal thymus, lung and spleen tissues.

REFERENCES

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2. Otsu, M., et al. 1991. Characterization of two 85 kDa proteins that associate with receptor tyrosine kinases, middle-T/pp60-src complexes and PI 3-kinase. *Cell* 65: 91-104.
3. Hiles, I.D., et al. 1992. Phosphatidylinositol 3-kinase: structure and expression of the 110 kDa catalytic subunit. *Cell* 70: 419-429.
4. Hu, P., et al. 1993. Cloning of a novel, ubiquitously expressed human phosphatidylinositol 3-kinase and identification of its binding site on p85. *Mol. Cell. Biol.* 13: 7677-7688.
5. Stoyanov, B., et al. 1995. Cloning and characterization of a G protein-activated human phosphoinositide-3 kinase. *Science* 269: 690-693.
6. Vanhaesebroeck, B., et al. 1997. p110 δ , a novel phosphoinositide 3-kinase in leukocytes. *Proc. Natl. Acad. Sci. USA* 94: 4330-4335.
7. Soond, D.R., et al. 2010. PI3K p110 δ regulates T-cell cytokine production during primary and secondary immune responses in mice and humans. *Blood* 115: 2203-2213.

CHROMOSOMAL LOCATION

Genetic locus: PIK3CD (human) mapping to 1p36.2.

PRODUCT

PI 3-kinase p110 δ siRNA (h2) 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PI 3-kinase p110 δ shRNA Plasmid (h2): sc-270137-SH and PI 3-kinase p110 δ shRNA (h2) Lentiviral Particles: sc-270137-V as alternate gene silencing products.

For independent verification of PI 3-kinase p110 δ (h2) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-270137A, sc-270137B and sc-270137C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

PI 3-kinase p110 δ siRNA (h2) is recommended for the inhibition of PI 3-kinase p110 δ 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 μ M in 66 μ l. 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 p110 δ (A-8): sc-55589 is recommended as a control antibody for monitoring of PI 3-kinase p110 δ 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 p110 δ gene expression knockdown using RT-PCR Primer: PI 3-kinase p110 δ (h2)-PR: sc-270137-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.