SANTA CRUZ BIOTECHNOLOGY, INC.

PI 3-kinase p110α siRNA (m): sc-39128

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 (p85α and p85β), each possessing one SH3 and two SH2 domains. Various p110 isoforms have been identified. p110α and p110β interact with p85α, and p110α has also been shown to interact with p85β *in vitro*. p110δ expression is restricted to white blood cells. It has been shown to bind p85α and β, but it apparently does not phosphorylate these subunits. p110δ seems to have the capacity to autophosphorylate. p110γ does not interact with the p85 subunits. It has been shown to be activated by α and βγ heterotrimeric G proteins.

REFERENCES

1. Skolnik, E.Y., et al. 1991. Cloning of PI 3-kinase-associated p85 utilizing a novel method for expression/cloning of target proteins for receptor tyrosine kinases. Cell 65: 83-90.
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.

CHROMOSOMAL LOCATION

Genetic locus: Pik3ca (mouse) mapping to 3 A3.

PRODUCT

PI 3-kinase p110α siRNA (m) 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 p110α shRNA Plasmid (m): sc-39128-SH and PI 3-kinase p110α shRNA (m) Lentiviral Particles: sc-39128-V as alternate gene silencing products.

For independent verification of PI 3-kinase p110α (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-39128A, sc-39128B and sc-39128C.

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 p110α siRNA (m) is recommended for the inhibition of PI 3-kinase p110α expression in mouse 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PI 3-kinase p110α gene expression knockdown using RT-PCR Primer: PI 3-kinase p110α (m)-PR: sc-39128-PR (20 µl, 545 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Fukui, M., et al. 2010. Mechanism for the protective effect of resveratrol against oxidative stress-induced neuronal death. Free Radic. Biol. Med. 49: 800-813.
2. Tsai, K.D., et al. 2012. Differential effects of LY294002 and wortmannin on inducible nitric oxide synthase expression in glomerular mesangial cells. Int. Immunopharmacol. 12: 471-480.
3. Han, S.C., et al. 2016. Productive entry of foot-and-mouth disease virus via macropinocytosis independent of phosphatidylinositol 3-kinase. Sci. Rep. 6: 19294.
4. Xuan, Y., et al. 2016. The activation of the NFκB-JNK pathway is independent of the PI3K-Rac1-JNK pathway involved in the bFGF-regulated human fibroblast cell migration. J. Dermatol. Sci. 82: 28-37.
5. Wang, X., et al. 2017. Feedback activation of basic fibroblast growth factor signaling via the Wnt/β-catenin pathway in skin fibroblasts. Front. Pharmacol. 8: 32.
6. Ling, M., et al. 2021. VEGFB promotes myoblasts proliferation and differentiation through VEGFR1-PI3K/Akt signaling pathway. Int. J. Mol. Sci. 22: 13352.

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.