SANTA CRUZ BIOTECHNOLOGY, INC.

PI 3-kinase p55γ siRNA (m): sc-61345

BACKGROUND

Phosphatidylinositol 3-kinase is a lipid kinase that phosphorylates the inositol ring of phosphatidylinositol and related compounds at the 3' position. PI 3-kinase p55γ (PIK3R3) is comprised of a catalytic subunit and a regulatory subunit. The human p55γ protein is composed of a rare amino terminal region followed by a proline-rich motif and two Src homology 2 (SH2) domains. PI 3-kinase p55γ mRNAs are expressed in most human fetal and adult tissues; predominant expression is observed in the adult testis. Splice variant(s) of PI 3-kinase p55γ have been identified; one of which has a deletion of 36 amino acids at the amino terminus and another which has an insertion of 59 amino acids at position 256 between the SH2 domains. Research suggests that PI 3-kinase p55γ interacts with the IGFIR (Insulin-like growth factor-I receptor) and IR (Insulin receptor) and may be involved in PI 3-kinase activation by these receptors.

REFERENCES

1. Dey, B.R., et al. 1998. Cloning of human p55 γ, a regulatory subunit of phosphatidylinositol 3-kinase, by a yeast two-hybrid library screen with the Insulin-like growth factor-I receptor. Gene 209: 175-183.
2. Xia, X., et al. 1999. Multiple forms of p55PIK, a regulatory subunit of phosphoinositide 3-kinase, are generated by alternative initiation of translation. Biochem. J. 341: 831-837.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606076. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Xia, X., et al. 2003. The N-terminal 24 amino acids of the p55 γ regulatory subunit of phosphoinositide 3-kinase binds Rb and induces cell cycle arrest. Mol. Cell. Biol. 23: 1717-1725.
5. Aaboe, M., et al. 2006. SOX4 expression in bladder carcinoma: clinical aspects and *in vitro* functional characterization. Cancer Res. 66: 3434-3442.
6. Zhang, L., et al. 2007. Integrative genomic analysis of phosphatidylinositol 3'-kinase family identifies PIK3R3 as a potential therapeutic target in epithelial ovarian cancer. Clin. Cancer Res. 13: 5314-5321.
7. Kallin, A., et al. 2007. SREBP-1 regulates the expression of heme oxygenase 1 and the phosphatidylinositol-3 kinase regulatory subunit p55 γ. J. Lipid Res. 48: 1628-1636.
8. Soroceanu, L., et al. 2007. Identification of IGF2 signaling through phosphoinositide-3-kinase regulatory subunit 3 as a growth-promoting axis in glioblastoma. Proc. Natl. Acad. Sci. USA 104: 3466-3471.

CHROMOSOMAL LOCATION

Genetic locus: Pik3r3 (mouse) mapping to 4 D1.

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.

PRODUCT

PI 3-kinase p55γ 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 p55γ shRNA Plasmid (m): sc-61345-SH and PI 3-kinase p55γ shRNA (m) Lentiviral Particles: sc-61345-V as alternate gene silencing products.

For independent verification of PI 3-kinase p55γ (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-61345A, sc-61345B and sc-61345C.

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 p55γ siRNA (m) is recommended for the inhibition of PI 3-kinase p55γ 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 p55γ gene expression knockdown using RT-PCR Primer: PI 3-kinase p55γ (m)-PR: sc-61345-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.