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SANTA CRUZ BIOTECHNOLOGY, INC.

PI 4-kinase II α siRNA (m): sc-152243

BACKGROUND

Phosphatidylinositol (PI) kinases participate in the first step in activating important cellular effectors, such as PIP2 (phosphatidylinositol bisphosphate) and PTEN. Unlike other PI-kinases, PI 4-kinase family members only phosphorylate phosphatidylinositols, are potently inhibited by adenosine and lack a transmembrane domain. Total PI 4-kinase activity is dependent upon PI 4-kinase β, PI 4-kinase α, PI 4-kinase II α and PI 4-kinase IIβ activities. PI 4-kinase II α (phosphatidylinositol 4-kinase type 2-α) is a 479 amino acid protein that cooperates with other PI 4-kinases to phosphorylate PI to PI4P at the D-4 position, which is the first committed step in producing PIP2. Highly expressed in heart, placenta, skeletal muscle, brain and kidney, PI 4-kinase II α can also be found at lower levels in thymus, small intestine and colon.

REFERENCES

1. Barylko, B., et al. 2001. A novel family of phosphatidylinositol 4-kinases conserved from yeast to humans. J. Biol. Chem. 276: 7705-7708.
2. Minogue, S., et al. 2001. Cloning of a human type II phosphatidylinositol 4-kinase reveals a novel lipid kinase family. J. Biol. Chem. 276: 16635-16640.
3. Balla, A., et al. 2002. Characterization of type II phosphatidylinositol 4-kinase isoforms reveals association of the enzymes with endosomal vesicular compartments. J. Biol. Chem. 277: 20041-20050.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 609763. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Wang, Y.J., et al. 2003. Phosphatidylinositol 4 phosphate regulates targeting of clathrin adaptor AP-1 complexes to the Golgi. Cell 114: 299-310.
6. Ishihara, Y., et al. 2006. The role of phosphatidylinositol 4-kinase type IIα in degranulation of RBL-2H3 cells. Inflamm. Res. 55: 465-468.
7. Pan, W., et al. 2008. Wnt3a-mediated formation of phosphatidylinositol 4,5-bisphosphate regulates LRP6 phosphorylation. Science 321: 1350-1353.

CHROMOSOMAL LOCATION

Genetic locus: Pi4k2a (mouse) mapping to 19 C3.

PRODUCT

PI 4-kinase II α 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 4-kinase II α shRNA Plasmid (m): sc-152243-SH and PI 4-kinase II α shRNA (m) Lentiviral Particles: sc-152243-V as alternate gene silencing products.

For independent verification of PI 4-kinase II α (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-152243A, sc-152243B and sc-152243C.

PROTOCOLS

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

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 4-kinase II α siRNA (m) is recommended for the inhibition of PI 4-kinase II α 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.

GENE EXPRESSION MONITORING

PI 4-kinase II α (B-5): sc-390026 is recommended as a control antibody for monitoring of PI 4-kinase II α 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 4-kinase II α gene expression knockdown using RT-PCR Primer: PI 4-kinase II α (m)-PR: sc-152243-PR (20 µl, 600 bp). 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.