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# PI 4-kinase II $\beta$ siRNA (m): sc-152244

## 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 trans-membrane domain. Total PI 4-kinase activity is dependent upon PI 4-kinase  $\beta$ , PI 4-kinase  $\alpha$ , PI 4-kinase II  $\alpha$  and PI 4-kinase II  $\beta$  activities. PI 4-kinase II  $\beta$  (phosphatidylinositol 4-kinase type II  $\beta$ ) is a 481 amino acid protein that is recruited to the membrane from the cytosol to stimulate synthesis of PIP2 and, in this way, PI 4-kinase II  $\beta$  contributes to the production of IP3.

PI 4-kinase II  $\beta$  may also be involved in the regulation of vesicular trafficking due to its associations with the endoplasmic reticulum and the Golgi apparatus. T cells specific for PI 4-kinase II  $\beta$  lyse normal and malignant hematopoietic cells, suggesting that PI 4-kinase II  $\beta$  may play a role in anti-tumor immunity.

## REFERENCES

- Barylko, B., et al. 2001. A novel family of phosphatidylinositol 4-kinases conserved from yeast to humans. *J. Biol. Chem.* 276: 7705-7708.
- 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.
- 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.
- Barylko, B., et al. 2002. Analysis of the catalytic domain of phosphatidylinositol 4-kinase type II. *J. Biol. Chem.* 277: 44366-44375.
- Wei, Y.J., et al. 2002. Type II phosphatidylinositol 4-kinase  $\beta$  is a cytosolic and peripheral membrane protein that is recruited to the plasma membrane and activated by Rac-GTP. *J. Biol. Chem.* 277: 46586-46593.

## CHROMOSOMAL LOCATION

Genetic locus: Pi4k2b (mouse) mapping to 5 C1.

## PRODUCT

PI 4-kinase II  $\beta$  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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PI 4-kinase II  $\beta$  shRNA Plasmid (m): sc-152244-SH and PI 4-kinase II  $\beta$  shRNA (m) Lentiviral Particles: sc-152244-V as alternate gene silencing products.

For independent verification of PI 4-kinase II  $\beta$  (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-152244A, sc-152244B and sc-152244C.

## PROTOCOLS

See our web site at [www.scbt.com](http://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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

PI 4-kinase II  $\beta$  siRNA (m) is recommended for the inhibition of PI 4-kinase II  $\beta$  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  $\mu$ M in 66  $\mu$ 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PI 4-kinase II  $\beta$  gene expression knockdown using RT-PCR Primer: PI 4-kinase II  $\beta$  (m)-PR: sc-152244-PR (20  $\mu$ 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.