

INPP5F siRNA (h): sc-90442

BACKGROUND

Inositol and phosphatidylinositol phosphates are important for numerous cellular processes, including neuronal survival and signal transductions from growth factors, neurotransmitters and G protein-coupled receptors. INPP5F (inositol polyphosphate 5-phosphatase F), also known as phosphatidylinositol phosphatase SAC2, is a 1,132 amino acid protein that exhibits 5-phosphatase activity specific for phosphatidylinositol 4,5-bisphosphate and phosphatidylinositol 3,4,5-triphosphate. INPP5F also modulates the Akt/GSK-3 pathway by decreasing Akt and GSK-3 phosphorylation. Containing one SAC domain, INPP5F is ubiquitously expressed, but especially abundant in brain, heart, skeletal muscle and kidney. Inositol polyphosphate 5-phosphatases usually have two conserved motifs that are essential for 5-phosphatase activity. However, INPP5F does not contain such motifs and phosphatase activity seems to exist in the SAC domain, suggesting a new type of phosphoinositide 5-phosphatase.

REFERENCES

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3. Choi, J.D., et al. 2005. A novel variant of INPP5F is imprinted in brain, and its expression is correlated with differential methylation of an internal CpG island. *Mol. Cell. Biol.* 25: 5514-5522.
4. Astle, M.V., et al. 2006. Regulation of phosphoinositide signaling by the inositol polyphosphate 5-phosphatases. *IUBMB Life* 58: 451-456.
5. Trivedi, C.M., et al. 2007. Hdac2 regulates the cardiac hypertrophic response by modulating Gsk3 β activity. *Nat. Med.* 13: 324-331.
6. Zhu, W., et al. 2009. INPP5F is a polyphosphoinositide phosphatase that regulates cardiac hypertrophic responsiveness. *Circ. Res.* 105: 1240-1247.
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CHROMOSOMAL LOCATION

Genetic locus: INPP5F (human) mapping to 10q26.11.

PRODUCT

INPP5F siRNA (h) 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 INPP5F shRNA Plasmid (h): sc-90442-SH and INPP5F shRNA (h) Lentiviral Particles: sc-90442-V as alternate gene silencing products.

For independent verification of INPP5F (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-90442A, sc-90442B and sc-90442C.

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

INPP5F siRNA (h) is recommended for the inhibition of INPP5F 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

INPP5F (A-6): sc-514657 is recommended as a control antibody for monitoring of INPP5F 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 INPP5F gene expression knockdown using RT-PCR Primer: INPP5F (h)-PR: sc-90442-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.