

SNX9 siRNA (m): sc-61598

BACKGROUND

Sorting nexin (SNX) proteins are members of a large family of hydrophilic PX (phospholipid-binding motif) domain-containing proteins that interact with a variety of receptor types. SNXs are widely expressed, although the tissue distribution of each SNX mRNA varies. The ability of SNXs to bind specific phospholipids, as well as their tendency to form protein-protein complexes, suggests a role for these proteins in cellular membrane trafficking and protein sorting. SNXs may also function specifically in pro-degradative sorting, internalization, endosomal recycling or simply in endosomal sorting. SNXs partially associate with cellular membranes, despite their hydrophilic nature. SNX9 resides in the cytosol where it influences the processing and trafficking of Insulin receptors. The enzyme aldolase binds to and inactivates SNX9. Phosphorylation of SNX9 releases aldolase and frees SNX9 to recruit and activate Dynamin II, a neuronal phosphoprotein and a GTPase enzyme which mediates late stages of endocytosis in both neural and non-neural cells.

REFERENCES

1. McClure, S.J., et al. 1997. Dynamin, endocytosis and intracellular signalling. *Mol. Membr. Biol.* 13: 189-215.
2. Worby, C.A., et al. 2002. Sorting out the cellular functions of sorting nexins. *Nat. Rev. Mol. Cell Biol.* 3: 919-931.
3. MaCaulay, S.L., et al. 2003. Insulin stimulates movement of sorting nexin 9 between cellular compartments: a putative role mediating cell surface receptor expression and Insulin action. *Biochem. J.* 376: 123-134.
4. Lundmark, R., et al. 2004. Regulated membrane recruitment of dynamin-2 mediated by sorting nexin 9. *J. Biol. Chem.* 279: 42694-42702.
5. Carlton, J.G., et al. 2005. Sorting nexins. *Curr. Biol.* 15: R819-R820.
6. Carlton, J., et al. 2005. Sorting nexins—unifying trends and new perspectives. *Traffic* 6: 75-82.
7. Jacques, C., et al. 2005. Two-step differential expression analysis reveals a new set of genes involved in thyroid oncogenic tumors. *J. Clin. Endocrinol. Metab.* 90: 2314-2320.
8. Soulet, F., et al. 2005. SNX9 regulates dynamin assembly and is required for efficient clathrin-mediated endocytosis. *Mol. Biol. Cell* 16: 2058-2067.

CHROMOSOMAL LOCATION

Genetic locus: Snx9 (mouse) mapping to 17 A1.

PRODUCT

SNX9 siRNA (m) is a pool of 2 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 SNX9 shRNA Plasmid (m): sc-61598-SH and SNX9 shRNA (m) Lentiviral Particles: sc-61598-V as alternate gene silencing products.

For independent verification of SNX9 (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-61598A and sc-61598B.

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

SNX9 siRNA (m) is recommended for the inhibition of SNX9 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 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

SNX9 (G-5): sc-166863 is recommended as a control antibody for monitoring of SNX9 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 SNX9 gene expression knockdown using RT-PCR Primer: SNX9 (m)-PR: sc-61598-PR (20 μ l, 577 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.

PROTOCOLS

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