

Syntaxin 4 siRNA (h): sc-36590

BACKGROUND

Correct vesicular transport is essential to the survival of eukaryotic cells. This process is determined by specific pairing of vesicle-associated SNAREs (v-SNAREs) with those on the target membrane (t-SNAREs). This complex then recruits soluble NSF attachment proteins (SNAPs) and N-ethylmaleimide-sensitive factor (NSF) to form the highly stable SNAP receptor (SNARE) complex. The formation of a SNARE complex pulls the vesicle and target membrane together and may provide the energy to drive fusion of the lipid bilayers. Syntaxins, a family of proteins involved in the fusion of synaptic vesicles with the plasma membrane, display broad tissue distribution and contain carboxy-terminal hydrophobic domains that direct themselves to their respective intracellular compartments. Syntaxin 4 is crucial for normal Insulin-stimulated glucose uptake in skeletal muscle and decreases in Syntaxin 4 protein levels result in reduction of whole-body Insulin-stimulated glucose metabolism.

REFERENCES

1. Bennett, M.K., et al. 1993. The syntaxin family of vesicular transport receptors. *Cell* 74: 863-873.
2. Nagahama, M., et al. 1996. A v-SNARE implicated in intra-Golgi transport. *J. Cell Biol.* 133: 507-516.
3. Lowe, S.L., et al. 1997. A SNARE involved in protein transport through the Golgi apparatus. *Nature* 389: 881-884.
4. Bentz, J., et al. 2000. Deployment of membrane fusion protein domains during fusion. *Cell Biol. Int.* 24: 819-838.
5. Yang, C., et al. 2001. Syntaxin 4 heterozygous knockout mice develop muscle Insulin resistance. *J. Clin. Invest.* 107: 1311-1318.

CHROMOSOMAL LOCATION

Genetic locus: STX4 (human) mapping to 16p11.2.

PRODUCT

Syntaxin 4 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 Syntaxin 4 shRNA Plasmid (h): sc-36590-SH and Syntaxin 4 shRNA (h) Lentiviral Particles: sc-36590-V as alternate gene silencing products.

For independent verification of Syntaxin 4 (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-36590A, sc-36590B and sc-36590C.

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

Syntaxin 4 siRNA (h) is recommended for the inhibition of Syntaxin 4 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

Syntaxin 4 (QQ-17): sc-101301 is recommended as a control antibody for monitoring of Syntaxin 4 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 Syntaxin 4 gene expression knockdown using RT-PCR Primer: Syntaxin 4 (h)-PR: sc-36590-PR (20 μ l, 455 bp). Annealing temperature for the primers should be 55-60 $^{\circ}$ C and the extension temperature should be 68-72 $^{\circ}$ C.

SELECT PRODUCT CITATIONS

1. Elgner, F., et al. 2016. Characterization of α -taxilin as a novel factor controlling the release of hepatitis C virus. *Biochem. J.* 473: 145-155.
2. Ren, H., et al. 2017. Identification of Syntaxin 4 as an essential factor for the hepatitis C virus life cycle. *Eur. J. Cell Biol.* 96: 542-552.
3. Nuges, C., et al. 2022. Lysosome exocytosis is required for mitosis in mammalian cells. *Biochem. Biophys. Res. Commun.* 626: 211-219.

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.