

GS27 siRNA (h): sc-41304

BACKGROUND

In eukaryotic cells, the Golgi apparatus receives newly synthesized proteins from the endoplasmic reticulum and delivers them after covalent modification to their destination in the cell. For membrane-directed proteins this process is believed to be carried out via vesicular transport. Correct vesicular transport 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 membranes together and may provide the energy to drive the fusion of the lipid bilayers. GS27 and GS28 belong to the SNARE protein family and are important trafficking proteins between the endoplasmic reticulum and the Golgi and between Golgi subcompartments. GS27 and GS28 both exist as cytoplasmically oriented integral membrane proteins. The human GS27 gene, which maps to chromosome 17q21.32, is located near a locus implicated in familial essential hypertension, indicating that it is a potential candidate gene for this disease. The human GS28 gene maps to chromosome 17q11.2.

REFERENCES

1. Nagahama, M., et al. 1996. A v-SNARE implicated in intra-Golgi transport. *J. Cell Biol.* 133: 507-516.
2. Hay, J.C., et al. 1997. Protein interactions regulating vesicle transport between the endoplasmic reticulum and Golgi apparatus in mammalian cells. *Cell* 89: 149-158.
3. Lowe, S.L., et al. 1997. A SNARE involved in protein transport through the Golgi apparatus. *Nature* 389: 881-884.
4. Bui, T.D., et al. 1999. cDNA characterization and chromosomal mapping of human Golgi SNARE GS27 and GS28 to chromosome 17. *Genomics* 57: 285-288.
5. Bentz, J. and Mittal, A. 2000. Deployment of membrane fusion protein domains during fusion. *Cell Biol. Int.* 24: 819-938.
6. Gmachl, M.J. and Wimmer, C. 2001. Sequential involvement of p115, SNAREs, and Rab proteins in intra-Golgi protein transport. *J. Biol. Chem.* 276: 18178-18184.

CHROMOSOMAL LOCATION

Genetic locus: GOSR2 (human) mapping to 17q21.32.

PRODUCT

GS27 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 GS27 shRNA Plasmid (h): sc-41304-SH and GS27 shRNA (h) Lentiviral Particles: sc-41304-V as alternate gene silencing products.

For independent verification of GS27 (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-41304A, sc-41304B and sc-41304C.

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

GS27 siRNA (h) is recommended for the inhibition of GS27 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

GS27 (F-6): sc-390261 is recommended as a control antibody for monitoring of GS27 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 GS27 gene expression knockdown using RT-PCR Primer: GS27 (h)-PR: sc-41304-PR (20 μ l, 500 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.