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GalNAc-TL1 siRNA (m): sc-145313

BACKGROUND

The UDP-N-acetyl- α -D-galactosamine:polypeptide N-acetylgalactosaminyltransferase (GalNAc-T) family of enzymes are substrate-specific proteins that catalyze the transfer of GalNAc (N-acetylgalactosaminyl) to serine and threonine residues onto various proteins, thereby initiating mucin-type O-linked glycosylation in the Golgi apparatus. GalNAc-TL1 (UDP-N-acetyl- α -D-galactosamine:polypeptide N-acetylgalactosaminyltransferase-like 1), also known as GALNT16, is a 588 amino acid single-pass type II membrane protein belonging to the glycosyltransferase 2 family, which localizes to the Golgi apparatus. GalNAc-TL1 utilizes manganese and calcium as cofactors, and catalyzes the initial reaction in O-linked oligosaccharide biosynthesis, which involves the transfer of an N-acetyl-D-galactosamine residue to a serine or threonine residue on the protein receptor. Containing one ricin B-type lectin domain, GalNAc-TL1 exists as two alternatively spliced isoforms.

REFERENCES

1. Porowska, H., et al. 1999. Activity of partially purified UDP-N-acetyl- α -D-galactosamine: polypeptide N-acetylgalactosaminyltransferase with different peptide acceptors. *Acta Biochim. Pol.* 46: 365-370.
2. Kumar, S., et al. 2001. Identification and initial characterization of 5,000 expressed sequenced tags (ESTs) each from adult human normal and osteoarthritic cartilage cDNA libraries. *Osteoarthr. Cartil.* 9: 641-653.
3. Schwientek, T., et al. 2002. Functional conservation of subfamilies of putative UDP-N-acetylgalactosamine:polypeptide N-acetylgalactosaminyltransferases in *Drosophila*, *Caenorhabditis elegans*, and mammals. One subfamily composed of I(2)35Aa is essential in *Drosophila*. *J. Biol. Chem.* 277: 22623-22638.
4. Argüeso, P., et al. 2003. The cell-layer- and cell-type-specific distribution of GalNAc-transferases in the ocular surface epithelia is altered during keratinization. *Invest. Ophthalmol. Vis. Sci.* 44: 86-92.
5. Cheng, L., et al. 2004. Characterization of a novel human UDP-GalNAc transferase, pp-GalNAc-T15. *FEBS Lett.* 566: 17-24.

CHROMOSOMAL LOCATION

Genetic locus: Galnt1 (mouse) mapping to 12 C3.

PRODUCT

GalNAc-TL1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see GalNAc-TL1 shRNA Plasmid (m): sc-145313-SH and GalNAc-TL1 shRNA (m) Lentiviral Particles: sc-145313-V as alternate gene silencing products.

For independent verification of GalNAc-TL1 (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-145313A, sc-145313B and sc-145313C.

PROTOCOLS

See our web site at 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 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

GalNAc-TL1 siRNA (m) is recommended for the inhibition of GalNAc-TL1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor GalNAc-TL1 gene expression knockdown using RT-PCR Primer: GalNAc-TL1 (m)-PR: sc-145313-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.