SANTA CRUZ BIOTECHNOLOGY, INC.

GalNAc-TL2 siRNA (m): sc-145314

BACKGROUND

The UDP-N-acetyl-α-D-galactosamine:polypeptide N-acetylgalactosaminyl-transferase (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-TL2 (polypeptide N-acetyl-galactosaminyltransferase-like protein 2), also known as protein-UDP acetyl-galactosaminyltransferase-like protein 2, is a 639 amino acid single-pass type II membrane protein that localizes to the Golgi apparatus and, like other GalNAc proteins, contains a stem region and a C-terminal ricin/lectin-like domain. GalNAc-TL2 utilizes calcium and manganese as cofactors. GalNAc-TL2 is widely expressed with highest expression in small intestine, placenta, spleen, cerebral cortex and ovary. Although it displays weaker catalytic activity than GalNAc-T2 and it prefers Muc1a as a substrate, GalNAc-TL2 can transfer up to seven GalNAc residues to the Muc5AC peptide.

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 5000 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-acetylgalactosaminyl-transferases in *Drosophila, Caenorhabditis elegans,* and mammals. One subfamily composed of l(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.
6. Herr, P., et al. 2008. Regulation of TGF-β signalling by N-acetylgalac-tosaminyltransferase-like 1. Development 135: 1813-1822.

CHROMOSOMAL LOCATION

Genetic locus: Galntl2 (mouse) mapping to 14 B.

PRODUCT

GalNAc-TL2 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see GalNAc-TL2 shRNA Plasmid (m): sc-145314-SH and GalNAc-TL2 shRNA (m) Lentiviral Particles: sc-145314-V as alternate gene silencing products.

For independent verification of GalNAc-TL2 (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-145314A, sc-145314B and sc-145314C.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

GalNAc-TL2 siRNA (m) is recommended for the inhibition of GalNAc-TL2 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 µM in 66 µl. 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-TL2 gene expression knockdown using RT-PCR Primer: GalNAc-TL2 (m)-PR: sc-145314-PR (20 µl). 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.