SANTA CRUZ BIOTECHNOLOGY, INC.

GalNAc-T11 siRNA (h): sc-75086

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-acetylgalactosamine) to serine and threonine residues onto various proteins, thereby initiating mucin-type O-linked glycosylation in the Golgi apparatus. GalNAc-T11 (polypeptide N-acetylgalactosaminyltransferase 11), also known as UDP-GalNAc:polypeptide N-acetylgalactosaminyltransferase 11, is a 608 amino acid protein that catalyzes glycosylation of Muc1, Muc4.1 and EA2, though it does not display enzymatic preference for erythropoitein. The N-terminal domain is involved in substrate binding and manganese coordination, while the C-terminal domain is involved in UDP-Gal binding and catalytic reaction. GalNAc-T11 is highly expressed in kidney tubules, though it is not expressed in glomeruli. There are two isoforms of GalNAc-T11 that are produced as a result of alternative splicing events.

REFERENCES

1. Elhammer, A.P., et al. 1993. The specificity of UDP-GalNAc:polypeptide N-acetylgalactosaminyltransferase as inferred from a database of *in vivo* substrates and from the *in vitro* glycosylation of proteins and peptides. J. Biol. Chem. 268: 10029-10038.
2. Elhammer, A.P., et al. 1999. The acceptor specificity of UDP-GalNAc:polypeptide N-acetylgalactosaminyltransferases. Glycoconj. J. 16: 171-180.
3. Irimura, T., et al. 1999. Diverse glycosylation of MUC1 and MUC2: potential significance in tumor immunity. J. Biochem. 126: 975-985.
4. 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.
5. Pratt, M.R., et al. 2004. Deconvoluting the functions of polypeptide N-α-acetylgalactosaminyltransferase family members by glycopeptide substrate profiling. Chem. Biol. 11: 1009-1016.

CHROMOSOMAL LOCATION

Genetic locus: GALNT11 (human) mapping to 7q36.1.

PRODUCT

GalNAc-T11 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see GalNAc-T11 shRNA Plasmid (h): sc-75086-SH and GalNAc-T11 shRNA (h) Lentiviral Particles: sc-75086-V as alternate gene silencing products.

For independent verification of GalNAc-T11 (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-75086A, sc-75086B and sc-75086C.

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 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-T11 siRNA (h) is recommended for the inhibition of GalNAc-T11 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 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-T11 gene expression knockdown using RT-PCR Primer: GalNAc-T11 (h)-PR: sc-75086-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.