SANTA CRUZ BIOTECHNOLOGY, INC.

GalNAc-T2 siRNA (h): sc-75094

BACKGROUND

GalNAc-T2 (UDP-N-acetyl-α-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 2), also known as Protein-UDP acetylgalactosaminyltransferase 2, or GALNT2 is a widely expressed 571 amino acid protein belonging to the glycosyltransferase 2 family and GalNAc-transferase subfamily. GalNAc-T2 exists as both a single-pass type II membrane protein and secreted protein, which preferentially localizes to the *trans* and medial regions of the Golgi stack. Like other members of the GalNAc-transferase family, GalNAc-T2 is known to catalyze the transfer of N-acetyl galactosamine (GalNAc) to the hydroxyl group of a threonine or serine residue in the initial reaction of O-linked oligosaccharide biosynthesis. GalNAc-T2 contains two conserved domains: an N-terminal domain, termed domain A or GT1 motif, which likely contributes to substrate binding and manganese coordination, and a C-terminal domain, termed domain B or Gal/GalNAc-T motif, which likely plays a role in catalysis and UDP-Gal binding.

REFERENCES

1. White, T., et al. 1995. Purification and cDNA cloning of a human UDP-N-acetyl-α-D-galactosamine: polypeptide N-acetylgalactosaminyltransferase. J. Biol. Chem. 270: 24156-24165.
2. Wandall, H.H., et al. 1997. Substrate specificities of three members of the human UDP-N-acetyl-α-D-galactosamine: polypeptide N-acetylgalactosaminyltransferase family, GalNAc-T1, -T2, and -T3. J. Biol. Chem. 272: 23503-23514.
3. Bennett, E.P., et al. 1998. Genomic organization and chromosomal localization of three members of the UDP-N-acetylgalactosamine: polypeptide N-acetylgalactosaminyltransferase family. Glycobiology 8: 547-555.
4. Mattu, T.S., et al. 1998. The glycosylation and structure of human serum IgA1, Fab, and Fc regions and the role of N-glycosylation on Fc α receptor interactions. J. Biol. Chem. 273: 2260-2272.
5. Röttger, S., et al. 1998. Localization of three human polypeptide GalNAc-transferases in HeLa cells suggests initiation of O-linked glycosylation throughout the Golgi apparatus. J. Cell Sci. 111: 45-60.

CHROMOSOMAL LOCATION

Genetic locus: GALNT2 (human) mapping to 1q42.13.

PRODUCT

GalNAc-T2 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-T2 shRNA Plasmid (h): sc-75094-SH and GalNAc-T2 shRNA (h) Lentiviral Particles: sc-75094-V as alternate gene silencing products.

For independent verification of GalNAc-T2 (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-75094A, sc-75094B and sc-75094C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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-T2 siRNA (h) is recommended for the inhibition of GalNAc-T2 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-T2 gene expression knockdown using RT-PCR Primer: GalNAc-T2 (h)-PR: sc-75094-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.