SANTA CRUZ BIOTECHNOLOGY, INC.

GalNAc-T7 siRNA (m): sc-62365

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. In contrast to other proteins of the GalNAc-T family, GalNAc-T7 (N-acetylgalactosaminyltransferase 7) is a 657 amino acid protein that does not transfer GalNAc onto serine or threonine on the protein receptor, but instead requires the prior addition of a GalNAc before adding additional GalNAc molecules. Its 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-T7 is expressed in kidney, uterus, omentum, CNS, retina and stomach. Single nucelotide polymorphisms within the gene encoding GalNAc-T7 may be linked to susceptibility of schizophrenia.

REFERENCES

1. Bennett, E.P., et al. 1999. A novel human UDP-N-acetyl-D-galactosamine: polypeptide N-acetylgalactosaminyltransferase, GalNAc-T7, with specificity for partial GalNAc-glycosylated acceptor substrates. FEBS Lett. 460: 226-230.
2. Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 605005. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
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. Ten Hagen, K.G., et al. 2003. All in the family: the UDP-GalNAc:polypeptide N-acetylgalactosaminyltransferases. Glycobiology 13: 1R-16R.
5. Vawter, M.P., et al. 2006. Genome scans and gene expression microarrays converge to identify gene regulatory loci relevant in schizophrenia. Hum. Genet. 119: 558-570.

CHROMOSOMAL LOCATION

Genetic locus: Galnt7 (mouse) mapping to 8 B2.

PRODUCT

GalNAc-T7 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-T7 shRNA Plasmid (m): sc-62365-SH and GalNAc-T7 shRNA (m) Lentiviral Particles: sc-62365-V as alternate gene silencing products.

For independent verification of GalNAc-T7 (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-62365A, sc-62365B and sc-62365C.

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-T7 siRNA (m) is recommended for the inhibition of GalNAc-T7 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-T7 gene expression knockdown using RT-PCR Primer: GalNAc-T7 (m)-PR: sc-62365-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.