



GalNAc-T10 siRNA (m): sc-75085

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 of various proteins, thereby initiating mucin-type O-linked glycosylation in the Golgi apparatus. GalNAc-T10 (Polypeptide N-acetylgalactosaminyltransferase 10), also known as UDP-GalNAc:polypeptide N-acetylgalactosaminyltransferase 10, is a 603 amino acid single-pass type II membrane protein that prefers Muc5Ac and EA2 peptide substrates. 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-T10 is widely expressed, with highest levels found in small intestine. There are four isoforms of GalNAc-T10 that are produced as a result of alternative splicing events.

REFERENCES

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3. Cheng, L., et al. 2002. Characterization of a novel human UDP-GalNAc transferase, pp-GalNAc-T10. *FEBS Lett.* 531: 115-121.
4. Ten Hagen, K.G., et al. 2003. All in the family: the UDP-GalNAc:polypeptide N-acetylgalactosaminyltransferases. *Glycobiology* 13: 1R-16R.
5. Online Mendelian Inheritance in Man, OMIM™. 2003. Johns Hopkins University, Baltimore, MD. MIM Number: 608043. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
6. Tarp, M.A., et al. 2008. Mucin-type O-glycosylation and its potential use in drug and vaccine development. *Biochim. Biophys. Acta* 1780: 546-563.
7. Perrine, C.L., et al. 2009. Glycopeptide-preferring polypeptide GalNAc transferase 10 (ppGalNAc-T10), involved in mucin-type O-glycosylation, has a unique GalNAc-O-Ser/Thr-binding site in its catalytic domain not found in ppGalNAc T1 or T2. *J. Biol. Chem.* 284: 20387-20397.

CHROMOSOMAL LOCATION

Genetic locus: Galnt10 (mouse) mapping to 11 B1.3.

PRODUCT

GalNAc-T10 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-T10 shRNA Plasmid (m): sc-75085-SH and GalNAc-T10 shRNA (m) Lentiviral Particles: sc-75085-V as alternate gene silencing products.

For independent verification of GalNAc-T10 (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-75085A, sc-75085B and sc-75085C.

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-T10 siRNA (m) is recommended for the inhibition of GalNAc-T10 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-T10 gene expression knockdown using RT-PCR Primer: GalNAc-T10 (m)-PR: sc-75085-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.

PROTOCOLS

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