SANTA CRUZ BIOTECHNOLOGY, INC.

β-1,4-GalNAc-T4 siRNA (m): sc-108231

BACKGROUND

β-1,4-GalNAc-T4 (β-1,4-N-acetyl-galactosaminyl transferase 4), also known as N-acetyl-β-glucosaminyl-glycoprotein 4-β-N-acetylgalactosaminyltransferase 1 or B4GALNT4, is a 1,039 amino acid protein belonging to the chondroitin N-acetylgalactosaminyltransferase family. Encoded by a gene that maps to human chromosome 11p15.5, β-1,4-GalNAc-T4 is highly expressed in ovary and in adult and fetal brain. β-1,4-GalNAc-T4 is also expressed in fetal kidney and lung, and exhibits subcellular localization in Golgi apparatus. β-1,4-GalNAc-T4 spans cell membranes singularly, with its N-terminus on the cytoplasmic side of the membrane. Located close to the N-terminus, the transmembrane domain of β-1,4-GalNAc-T4 functions as an anchor. β-1,4-GalNAc-T4 participates in N-acetyl-β-glucosaminyl-glycoprotein 4-β-N-acetylgalactosaminyltransferase activities.

REFERENCES

1. Nagata, Y., et al. 1994. Expression cloning of β 1,4 N-acetylgalactosaminyltransferase cDNAs that determine the expression of GM2 and GD2 gangliosides. J. Biol. Chem. 269: 7045.
2. Gotoh, M., et al. 2004. Molecular cloning and characterization of β1,4-N-acetylgalactosaminyltransferases IV synthesizing N,N'-diacetyllactosediamine. FEBS Lett. 562: 134-140.
3. Togayachi, A., et al. 2006. Comprehensive enzymatic characterization of glycosyltransferases with a β3GT or β4GT motif. Meth. Enzymol. 416: 91-102.
4. Cheng, S.L., et al. 2007. Toxicogenomics of A375 human malignant melanoma cells treated with arbutin. J. Biomed. Sci. 14: 87-105.
5. Roeckel, N., et al. 2009. High frequency of LMAN1 abnormalities in colorectal tumors with microsatellite instability. Cancer Res. 69: 292-299.
6. Ito, H., et al. 2009. Strategy for glycoproteomics: identification of glycoalteration using multiple glycan profiling tools. J. Proteome Res. 8: 1358-1367.
7. Fukushima, K., et al. 2010. α1,2-fucosylated and β-N-acetylgalactosaminylated prostate-specific antigen as an efficient marker of prostatic cancer. Glycobiology 20: 452-460.

CHROMOSOMAL LOCATION

Genetic locus: B4galnt4 (mouse) mapping to 7 F5.

PRODUCT

β-1,4-GalNAc-T4 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 β-1,4-GalNAc-T4 shRNA Plasmid (m): sc-108231-SH and β-1,4-GalNAc-T4 shRNA (m) Lentiviral Particles: sc-108231-V as alternate gene silencing products.

For independent verification of β-1,4-GalNAc-T4 (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-108231A, sc-108231B and sc-108231C.

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

β-1,4-GalNAc-T4 siRNA (m) is recommended for the inhibition of β-1,4-GalNAc-T4 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 β-1,4-GalNAc-T4 gene expression knockdown using RT-PCR Primer: β-1,4-GalNAc-T4 (m)-PR: sc-108231-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.