SANTA CRUZ BIOTECHNOLOGY, INC.

β-1,3-Gal-T4 siRNA (h): sc-61920

BACKGROUND

β-1,3-Gal-T4 (β-3-galactosyltransferase 4), also known as Gal-T2, is a member of the β-1,3-Gal-T family of type II membrane bound glycoproteins. It is expressed in various tissues including pancreas, heart, skeletal muscle and, to a lesser extent, brain, kidney, placenta, lung, liver and some cancer cells. β-1,3-Gal-T4 localizes to the Golgi apparatus. It consists of an N-terminal cytoplasmic domain, a transmembrane domain, a hydrophobic stem region and a catalytic domain. Unlike other β-1,3-Gal-T family members, β-1,3-Gal-T4 has only one N-linked glycosylation site. Enzymatic activity of β-1,3-Gal-T4 is dependent on glycosylation at this site. Active β-1,3-Gal-T4 catalyzes the addition of galactose (from the sugar donor UDP-Gal) to the N-acetylgalactosamine residue of gangliosides GM2, GD2 and GT2 or to the glycolipid GA2.

REFERENCES

1. Amado, M., et al. 1998. A family of human β-3-galactosyltransferases. Characterization of four members of a UDP-galactose: β-N-acetyl-glucosamine/β-nacetyl-galactosamine β-1,3-galactosyltransferase family. J. Biol. Chem. 273: 12770-12778.
2. Martina, J.A., et al. 2000. GM1 synthase depends on N-glycosylation for enzyme activity and trafficking to the Golgi complex. Neurochem. Res. 25: 725-731.
3. Gilbert, M., et al. 2000. Biosynthesis of ganglioside mimics in *Campylobacter jejuni* OH4384. Identification of the glycosyltransferase genes, enzymatic synthesis of model compounds and characterization of nanomole amounts by 600 mhz ^{1}h and ^{13}c NMR analysis. J. Biol. Chem. 275: 3896-3906.
4. Salvini, R., et al. 2001. β-1,3-Galactosyltransferase β-3-Gal-T5 acts on the GlcNAcβ-1→3Galβ-1→4GlcNAcβ-1→R sugar chains of carcinoembryonic antigen and other N-linked glycoproteins and is downregulated in colon adenocarcinomas. J. Biol. Chem. 276: 3564-3573.

CHROMOSOMAL LOCATION

Genetic locus: B3GALT4 (human) mapping to 6p21.32.

PRODUCT

β-1,3-Gal-T4 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 β-1,3-Gal-T4 shRNA Plasmid (h): sc-61920-SH and β-1,3-Gal-T4 shRNA (h) Lentiviral Particles: sc-61920-V as alternate gene silencing products.

For independent verification of β-1,3-Gal-T4 (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-61920A, sc-61920B and sc-61920C.

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

β-1,3-Gal-T4 siRNA (h) is recommended for the inhibition of β-1,3-Gal-T4 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 β-1,3-Gal-T4 gene expression knockdown using RT-PCR Primer: β-1,3-Gal-T4 (h)-PR: sc-61920-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.