SANTA CRUZ BIOTECHNOLOGY, INC.

β-1,3-Gal-T1 siRNA (h): sc-105001

BACKGROUND

β-1,3-Gal-T1 (UDP-Gal:βGlcNAc β 1,3-galactosyltransferase, polypeptide 1), also known as β3Gal-T1 or B3GALT1, is a 326 amino acid single-pass type II membrane protein belonging to the glycosyltransferase 31 family. Encoded by a gene that maps to human chromosome 2q24.3, β-1,3-Gal-T1 is expressed in brain and colon mucosa, and to a lesser extent in colon adenocarcinoma cells. β-1,3-Gal-T1 plays a role in the biosynthesis of carbohydrate moieties of glycolipids and glycoproteins. β-1,3-Gal-T1 transfers galactose to substrates with a terminal β-N-acetylglucosamine (β-GlcNAc) residue, but is inactive towards substrates with terminal α-N-acetylglucosamine (α-GlcNAc) or α-N-acetylgalactosamine (α-GalNAc) residues. β-1,3-Gal-T1 shows strict donor substrate specificity for UDP-galactose.

REFERENCES

1. Hennet, T., et al. 1998. Genomic cloning and expression of three murine UDP-galactose: β-N-acetylglucosamine β1,3-galactosyltransferase genes. J. Biol. Chem. 273: 58-65.
2. Kolbinger, F., et al. 1998. Cloning of a human UDP-galactose:2-acetamido-2-deoxy-D-glucose 3β-galactosyltransferase catalyzing the formation of type 1 chains. J. Biol. Chem. 273: 433-440.
3. Amado, M., et al. 1998. A family of human β3-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.
4. Amado, M., et al. 1999. Identification and characterization of large galactosyltransferase gene families: galactosyltransferases for all functions. Biochim. Biophys. Acta 1473: 35-53.
5. Bardoni, A., et al. 1999. Differential expression of β1,3-galactosyltransferases in human colon cells derived from adenocarcinomas or normal mucosa. FEBS Lett. 451: 75-80.
6. Sprong, H., et al. 2003. Association of the Golgi UDP-galactose transporter with UDP-galactose:ceramide galactosyltransferase allows UDP-galactose import in the endoplasmic reticulum. Mol. Biol. Cell 14: 3482-3493.
7. SWISS-PROT/TrEMBL (Q9Y5Z6). World Wide Web URL: http://www.uniprot.org/uniprot/Q9Y5Z6

CHROMOSOMAL LOCATION

Genetic locus: B3GALT1 (human) mapping to 2q24.3.

PRODUCT

β-1,3-Gal-T1 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-T1 shRNA Plasmid (h): sc-105001-SH and β-1,3-Gal-T1 shRNA (h) Lentiviral Particles: sc-105001-V as alternate gene silencing products.

For independent verification of β-1,3-Gal-T1 (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-105001A, sc-105001B and sc-105001C.

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-T1 siRNA (h) is recommended for the inhibition of β-1,3-Gal-T1 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-T1 gene expression knockdown using RT-PCR Primer: β-1,3-Gal-T1 (h)-PR: sc-105001-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Chachadi, V.B., et al. 2013. Prostatic cell-specific regulation of the synthesis of MUC1-associated sialyl Lewis a. PLoS ONE 8: e57416.

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.