SANTA CRUZ BIOTECHNOLOGY, INC.

β-1,4-Gal-T3 siRNA (h): sc-40618

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Several oligosaccharide structures and protein glycoconjugate types are found in nature. Homologous glycosyltransferase (GT) gene families catalyze the formation of glycosidic linkages. The β-1,3 galactosyltransferase (β3GalT) gene family encodes a set of type II transmembrane glycoproteins that are catalytically diverse and use different donor substrates (UDP-galactose and UDP-N-acetylglucosamine) and different acceptor sugars (N-acetylglcosamine, galactose, N-acetylgalactosamine) to catalyze the addition of an activated monosaccharide to a terminal lactose. The protein coding sequences for β-1,3-Gal-T genes comprise a single exon and are distantly related to the *Drosophila brainiac* gene. The β-1,4-galactosyltransferase (β4GalT) gene family encodes type II membrane-bound glycoproteins that show exclusive specificity for the donor substrate, UDP-galactose. β-1,4-Gal-T genes transfer galactose in a β-1,4 linkage to similar acceptor sugars; each gene has a distinct function in the biosynthesis of different glycoconjugates and saccharide structures. GTs on the surface of sperm in part mediate gamete adhesion by binding to appropriate carbohydrate substrates in the egg zona pellucida. In several tissues and cell lines, GTs localize to the Golgi complex.

REFERENCES

1. Shur, B.D. 1984. The receptor function of galactosyltransferase during cellular interactions. Mol. Cell. Biochem. 61: 143-158.
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3. Strous, G.J. 1986. Golgi and secreted galactosyltransferase. CRC Crit. Rev. Biochem. 21: 119-151.
4. 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.
5. Amado, M., et al. 1999. Identification and characterization of large galactosyltransferase gene families: galactosyltransferases for all functions. Biochim. Biophys. Acta 1473: 35-53.
6. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 603093. World Wide Web URL: http://www.ncbi.nlm.nih. gov/omim/
7. LocusLink Report (LocusID: 2683). http://www.ncbi.nlm.nih.gov/LocusLink/

CHROMOSOMAL LOCATION

Genetic locus: B4GALT3 (human) mapping to 1q23.3.

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.

PRODUCT

β-1,4-Gal-T3 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-1,4-Gal-T3 shRNA Plasmid (h): sc-40618-SH and β-1,4-Gal-T3 shRNA (h) Lentiviral Particles: sc-40618-V as alternate gene silencing products.

For independent verification of β-1,4-Gal-T3 (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-40618A, sc-40618B and sc-40618C.

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-Gal-T3 siRNA (h) is recommended for the inhibition of β-1,4-Gal-T3 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-1,4-Gal-T3 gene expression knockdown using RT-PCR Primer: β-1,4-Gal-T3 (h)-PR: sc-40618-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.