SANTA CRUZ BIOTECHNOLOGY, INC.

β-1,4-Gal-T1 siRNA (m): sc-40617

BACKGROUND

The β-1,4-Gal-T1 gene, which maps to chromosome 9p13, is one of seven β-1,4-galactosyltransferase (β-1,4-Gal-T) genes. These genes encode type II membrane-bound glycoproteins that appear to have exclusive specificity for the donor substrate UDP-galactose. These protein products transfer galactose in a β-1,4 linkage to similar acceptor sugars, such as GlcNAc, Glc, and Xyl. These type II membrane glycoproteins have an N-terminal hydrophobic signal sequence that directs the protein to the Golgi apparatus and remains uncleaved to function as a transmembrane anchor. The β-1,4-Gal-T1 gene is unique among the β-1,4-Gal-T genes in that it encodes an enzyme that participates in both glycoconjugation and lactose biosynthesis. The β-1,4-Gal-T1 protein is encoded by two transcripts with approximate lengths of 4.1 kb and 3.9 kb, which differ only at their 5' ends. The longer transcript encodes the type II membrane-bound, *trans*-Golgi resident protein involved in glycoconjugate biosynthesis. The shorter transcript encodes a protein that is cleaved to form the soluble lactose synthase.

REFERENCES

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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.
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CHROMOSOMAL LOCATION

Genetic locus: B4galt1 (mouse) mapping to 4 A5.

PRODUCT

β-1,4-Gal-T1 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-Gal-T1 shRNA Plasmid (m): sc-40617-SH and β-1,4-Gal-T1 shRNA (m) Lentiviral Particles: sc-40617-V as alternate gene silencing products.

For independent verification of β-1,4-Gal-T1 (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-40617A, sc-40617B and sc-40617C.

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-T1 siRNA (m) is recommended for the inhibition of β-1,4-Gal-T1 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-Gal-T1 gene expression knockdown using RT-PCR Primer: β-1,4-Gal-T1 (m)-PR: sc-40617-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.