SANTA CRUZ BIOTECHNOLOGY, INC.

β-1,4-Gal-T7 siRNA (m): sc-108227

BACKGROUND

β-1,4-galactosyltransferases (β-1,4-Gal-T) are type II membrane-bound glycoproteins that are substrate-specific and function to transfer galactose in a β-1,4 linkage to an acceptor sugar. There are seven members of the β-1,4-Gal-T family, all of which are directed to the Golgi apparatus through a hydrophobic sequence at the N-terminus. β-1,4-Gal-T7, also known as B4GALT7 or XGALT1, is a 327 amino acid single-pass type II membrane protein that is expressed at high levels in heart, pancreas and liver. β-1,4-Gal-T7 uses manganese to catalyze the UDP-dependent biosynthesis of glycosphingolipids. The gene encoding β-1,4-Gal-T7 is mutated in Ehlers-Danlos syndrome progeroid type (EDSP), a variant form of Ehlers-Danlos syndrome characterized by progeroid facies, mild mental retardation, short stature, skin hyperextensibility, moderate skin fragility and joint hypermobility principally in digits.

REFERENCES

1. Pal, R., et al. 1989. Role of oligosaccharides in the processing and maturation of envelope glycoproteins of human immunodeficiency virus type 1. Proc. Natl. Acad. Sci. USA 86: 3384-3388.
2. Lo, N.W., et al. 1998. The expanding β 4-galactosyltransferase gene family: messages from the databanks. Glycobiology 8: 517-526.
3. Amado, M., et al. 1999. Identification and characterization of large galactosyltransferase gene families: galactosyltransferases for all functions. Biochim. Biophys. Acta 1473: 35-53.
4. Kuroiwa, A., et al. 2000. Assignment of human xylosylprotein β-1,4-galactosyltransferase gene (B4GALT7) to human chromosome 5q35.2→q35.3 by *in situ* hybridization. Cytogenet. Cell Genet. 89: 8-9.
5. Faiyaz-Ul-Haque, M., et al. 2004. A novel missense mutation in the galactosyltransferase-I (B4GALT7) gene in a family exhibiting facioskeletal anomalies and Ehlers-Danlos syndrome resembling the progeroid type. Am. J. Med. Genet. A 128A: 39-45.

CHROMOSOMAL LOCATION

Genetic locus: B4galt7 (mouse) mapping to 13 B1.

PRODUCT

β-1,4-Gal-T7 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-T7 shRNA Plasmid (m): sc-108227-SH and β-1,4-Gal-T7 shRNA (m) Lentiviral Particles: sc-108227-V as alternate gene silencing products.

For independent verification of β-1,4-Gal-T7 (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-108227A, sc-108227B and sc-108227C.

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-1,4-Gal-T7 siRNA (m) is recommended for the inhibition of β-1,4-Gal-T7 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-T7 gene expression knockdown using RT-PCR Primer: β-1,4-Gal-T7 (m)-PR: sc-108227-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.