

β-1,4-Gal-T6 siRNA (h): sc-72406

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 hydro-phobic sequence at the N-terminus. β-1,4-Gal-T6, also known as B4GALT6, is a 382 amino acid single-pass type II membrane protein that localizes to the Golgi apparatus and belongs to the β-1,4-galactosyltransferase family. Expressed at high levels in adrenal gland and brain and present at lower levels in lung, liver and colon, β-1,4-Gal-T6 uses magnesium or zinc to catalyze the UDP-dependent biosynthesis of glycosphingolipids. The gene encoding β-1,4-Gal-T6 maps to human chromosome 18q12.1, which houses over 300 protein-coding genes and contains nearly 76 million bases.

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. Fan, Y., et al. 2002. Molecular cloning, genomic organization, and mapping of β 4-Gal-T6β, a brain abundant member of β 4-galactosyltransferase gene family, to human chromosome 18q12.1. *DNA Seq.* 13: 1-8.
5. Online Mendelian Inheritance in Man, OMIM™. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 604017. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
6. Narayan, S., et al. 2009. Evidence for disruption of sphingolipid metabolism in schizophrenia. *J. Neurosci. Res.* 87: 278-288.

CHROMOSOMAL LOCATION

Genetic locus: B4GALT6 (human) mapping to 18q12.1.

PRODUCT

β-1,4-Gal-T6 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-T6 shRNA Plasmid (h): sc-72406-SH and β-1,4-Gal-T6 shRNA (h) Lentiviral Particles: sc-72406-V as alternate gene silencing products.

For independent verification of β-1,4-Gal-T6 (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-72406A, sc-72406B and sc-72406C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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-T6 siRNA (h) is recommended for the inhibition of β-1,4-Gal-T6 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-T6 gene expression knockdown using RT-PCR Primer: β-1,4-Gal-T6 (h)-PR: sc-72406-PR (20 μl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.