SANTA CRUZ BIOTECHNOLOGY, INC.

β-1,3-Gal-TL siRNA (m): sc-62007

BACKGROUND

β-1,3-Gal-TL (β1,3-glycosyltransferase-like, B3GTL, B3Glc-T or Gal-T) is a ubiquitously expressed O-fucosyltransferase with highest levels of expression in testis and uterus. It is a single pass type II membrane protein that localizes to the endoplasmic reticulum. β-1,3-Gal-TL contributes to O-fucosylglycan elongation on thrombosin type 1 repeat (TSR) domains. It adds a glucose from UDP-glucose to a particular α-linked fucose in correctly folded TSRs, possibly recognizing a specific fold as opposed to amino acid sequence. β-1,3-Gal-TL belongs to the glycosyltransferase 31 family of enzymes. It is conserved from *Caenorhabditis elegans* to humans and shares 28% homology with fringe. It contains a DXD motif that is required for its catalytic activity and a KDEL-like REEL sequence at its C-terminal. Mutations in the gene encoding β-1,3-Gal-TL can result in Peters Plus syndrome.

REFERENCES

1. Heinonen, T.Y., et al. 2003. A novel human glycosyltransferase: primary structure and characterization of the gene and transcripts. Biochem. Biophys. Res. Commun. 309: 166-174.
2. Jacques, C., et al P. 2005. Two-step differential expression analysis reveals a new set of genes involved in thyroid oncocytic tumors. J. Clin. Endocrinol. Metab. 90: 2314-2320.
3. Hu, N., et al. 2006. Genome-wide loss of heterozygosity and copy number alteration in esophageal squamous cell carcinoma using the affymetrix genechip mapping 10 K array. BMC Genomics 7: 299.
4. Luo, Y., et al. 2006. Two distinct pathways for O-fucosylation of epidermal growth factor-like or thrombospondin type 1 repeats. J. Biol. Chem. 281: 9385-9392.
5. Sato, T., et al. 2006. Molecular cloning and characterization of a novel human β1,3-glucosyltransferase, which is localized at the endoplasmic reticulum and glucosylates O-linked fucosylglycan on thrombospondin type 1 repeat domain. Glycobiology 16: 1194-1206.

CHROMOSOMAL LOCATION

Genetic locus: B3galtl (mouse) mapping to 5 G3.

PRODUCT

β-1,3-Gal-TL 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-1,3-Gal-TL shRNA Plasmid (m): sc-62007-SH and β-1,3-Gal-TL shRNA (m) Lentiviral Particles: sc-62007-V as alternate gene silencing products.

For independent verification of β-1,3-Gal-TL (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-62007A, sc-62007B and sc-62007C.

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-1,3-Gal-TL siRNA (m) is recommended for the inhibition of β-1,3-Gal-TL 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-1,3-Gal-TL gene expression knockdown using RT-PCR Primer: β-1,3-Gal-TL (m)-PR: sc-62007-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.