SANTA CRUZ BIOTECHNOLOGY, INC.

β-1,3-Gal-TL siRNA (h): sc-62006

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. 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.

CHROMOSOMAL LOCATION

Genetic locus: B3GLCT (human) mapping to 13q12.3.

PRODUCT

β-1,3-Gal-TL 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-1,3-Gal-TL shRNA Plasmid (h): sc-62006-SH and β-1,3-Gal-TL shRNA (h) Lentiviral Particles: sc-62006-V as alternate gene silencing products.

For independent verification of β-1,3-Gal-TL (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-62006A, sc-62006B and sc-62006C.

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 (h) is recommended for the inhibition of β-1,3-Gal-TL 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.

GENE EXPRESSION MONITORING

β-1,3-Gal-TL (C-1): sc-515662 is recommended as a control antibody for monitoring of β-1,3-Gal-TL gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

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 (h)-PR: sc-62006-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Liu, Y.Y., et al. 2010. Glucosylceramide synthase upregulates MDR1 expression in the regulation of cancer drug resistance through cSrc and β-catenin signaling. Mol. Cancer 9: 145.

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.