SANTA CRUZ BIOTECHNOLOGY, INC.

Ggta1 siRNA (m): sc-145392

BACKGROUND

Homologous glycosyltransferase (GT) gene families catalyze the formation of glycosidic linkages. The β-1,3 galactosyltransferase (β3GalT) gene family encodes a set of type II transmembrane glycoproteins that are catalytically diverse and use different donor substrates (UDP-galactose and UDP-N-acetylglucosamine) and different acceptor sugars (N-acetylglucosamine, galactose, N-acetylgalactosamine) to catalyze the addition of an activated monosaccharide to a terminal lactose. The β-1,4-galactosyltransferase (β4GalT) gene family shows exclusive specificity for the donor substrate UDP-galactose. In several tissues and cell lines, GTs localize to the Golgi complex. Ggta1 (N-acetyllactosaminide α-1,3-galactosyltransferase), also known as GALT or Gal, is a 394 amino acid single-pass type II membrane protein that belongs to the glycosyltransferase 6 family. Localizing to the Golgi apparatus, Ggta1 utilizes manganese as a cofactor and is involved in the transfer of galactose from UDP-galactose to acceptor molecules. Existing as three alternatively spliced isoforms, the gene encoding Ggta1 maps to mouse chromosome 2 B.

REFERENCES

1. Larsen, R.D., et al. 1989. Isolation of a cDNA encoding a murine UDPgalactose:β-D-galactosyl-1,4-N-acetyl-D-glucosaminide α-1,3-galactosyltransferase: expression cloning by gene transfer. Proc. Natl. Acad. Sci. USA 86: 8227-8231.
2. Joziasse, D.H., et al. 1992. Murine α 1,3-galactosyltransferase. A single gene locus specifies four isoforms of the enzyme by alternative splicing. J. Biol. Chem. 267: 5534-5541.
3. Koike, C., et al. 2001. Comparison of the regulatory regions of the α1,3galactosyltransferase gene between murine and porcine species. Transplant. Proc. 33: 710-711.
4. Alexander, W.S., et al. 2006. Thrombocytopenia and kidney disease in mice with a mutation in the C1galt1 gene. Proc. Natl. Acad. Sci. USA 103: 16442-16447.

CHROMOSOMAL LOCATION

Genetic locus: Ggta1 (mouse) mapping to 2 B.

PRODUCT

Ggta1 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 Ggta1 shRNA Plasmid (m): sc-145392-SH and Ggta1 shRNA (m) Lentiviral Particles: sc-145392-V as alternate gene silencing products.

For independent verification of Ggta1 (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-145392A, sc-145392B and sc-145392C.

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

Ggta1 siRNA (m) is recommended for the inhibition of Ggta1 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 Ggta1 gene expression knockdown using RT-PCR Primer: Ggta1 (m)-PR: sc-145392-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.