SANTA CRUZ BIOTECHNOLOGY, INC.

GnT-IVH siRNA (h): sc-96198

BACKGROUND

GnT-IVH, also known as HGNT-IV-H or MGAT4C (mannosyl (α-1,3-)-glycoprotein β-1,4-N-acetylglucosaminyltransferase, isozyme C), is a 478 amino acid single-pass type II membrane protein that localizes to the Golgi apparatus and belongs to the glycosyltransferase 54 family. Expressed in liver, heart, testis, brain and adrenal gland, GnT-IVH functions as a glycosyltransferase that catalyzes the transfer of N-acetylglucosamine (GlcNAc) to the core mannose residues of N-linked glycans, thereby playing a crucial role in the production of tri- and tetra-antennary N-linked sugar chains. The gene encoding GnT-IVH maps to human chromosome 12, which encodes over 1,100 genes and comprises approximately 4.5% of the human genome.

REFERENCES

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2. Furukawa, T., et al. 1999. Cloning and characterization of the human UDP-N-acetylglucosamine: α-1,3-D-mannoside β-1,4-N-acetylglucosaminyltransferase IV-homologue (hGnT-IV-H) gene. J. Hum. Genet. 44: 397-401.
3. Sakamoto, Y., et al. 2000. Molecular cloning and expression of cDNA encoding chicken UDP-N-acetyl-D-glucosamine (GlcNAc): GlcNAcβ 1-6(GlcNAcβ 1-2)- manα 1-R[GlcNAc to man]β 1,4N-acetylglucosaminyltransferase VI. J. Biol. Chem. 275: 36029-36034.
4. Zhang, W., et al. 2002. Cloning and expression of a novel UDP-GlcNAc: α-D-mannoside β1,2-N-acetylglucosaminyltransferase homologous to UDP-GlcNAc:α-3-D-mannoside β1,2-N-acetylglucosaminyltransferase I. Biochem. J. 361: 153-162.
5. Schachter, H. 2002. The role of the GlcNAc(β)1,2Man(α)- moiety in mammalian development. Null mutations of the genes encoding UDP-N-acetylglucosamine:α-3-D-mannoside β-1,2-N-acetylglucosaminyltransferase I and UDP-N-acetylglucosamine:α-D-mannoside β-1,2-N-acetylglucosaminyltransferase I.2 cause embryonic lethality and congenital muscular dystrophy in mice and men, respectively. Biochim. Biophys. Acta 1573: 292-300.

CHROMOSOMAL LOCATION

Genetic locus: MGAT4C (human) mapping to 12q21.31.

PRODUCT

GnT-IVH 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 GnT-IVH shRNA Plasmid (h): sc-96198-SH and GnT-IVH shRNA (h) Lentiviral Particles: sc-96198-V as alternate gene silencing products.

For independent verification of GnT-IVH (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-96198A, sc-96198B and sc-96198C.

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

GnT-IVH siRNA (h) is recommended for the inhibition of GnT-IVH 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 GnT-IVH gene expression knockdown using RT-PCR Primer: GnT-IVH (h)-PR: sc-96198-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.