SANTA CRUZ BIOTECHNOLOGY, INC.

GCNT1 siRNA (h): sc-92945

BACKGROUND

GCNT1, also designated core 2 β1,6-N-acetylglucosaminyltransferase I or C2GnT-I, plays an important regulatory role in the biosynthesis of mucin-type O-glycans, which serve as ligands in cell adhesion. GCNT1 is expressed in a variety of cell types, including lymphocytes and mucin-producing cells. Specifically, GCNT1 expression in leukocytes regulates the synthesis of core 2 O-glycans that carry sialyl-Lewis x (sLex) oligosaccharides, which confer high affinity binding to selectins. Downregulation of selectin ligand expression levels has been shown to inhibit tissue infiltration. Therefore, GCNT1 represents a potential drug target for the treatment of inflammatory disorders and other pathologies involving selectins.

REFERENCES

1. Falkenberg, V.R., et al. 2003. Multiple transcription initiation and alternative splicing in the 5' untranslated region of the core 2 β1-6-N-acetylglucosaminyltransferase I gene. Glycobiology 13: 411-418.
2. Yen, T.Y., et al. 2003. Highly conserved cysteines of mouse core 2 β1,6-N-acetylglucosaminyltransferase I form a network of disulfide bonds and include a thiol that affects enzyme activity. J. Biol. Chem. 278: 45864-45881.
3. Prorok-Hamon, M., et al. 2005. N-glycans of core 2 β1,6-N-acetylglucosaminyltransferase-I (C2GnT-I) but not those of α1,3-fucosyltransferase-VII (FucT-VII) are required for the synthesis of functional P-Selectin glycoprotein ligand-1 (PSGL-1): effects on P-, L- and E-selectin binding. Biochem. J. 391: 491-502.
4. Kikuchi, J., et al. 2005. Not core 2 β1,6-N-acetylglucosaminyltransferase-2 or -3 but -1 regulates sialyl-Lewis x expression in human precursor B cells. Glycobiology 15: 271-280.
5. Kikuchi, J., et al. 2005. Transfection of antisense core 2 β1,6-N-acetylglucosaminyltransferase-1 cDNA suppresses selectin ligand expression and tissue infiltration of B-cell precursor leukemia cells. Leukemia 19: 1934-1940.

CHROMOSOMAL LOCATION

Genetic locus: GCNT1 (human) mapping to 9q21.13.

PRODUCT

GCNT1 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 GCNT1 shRNA Plasmid (h): sc-92945-SH and GCNT1 shRNA (h) Lentiviral Particles: sc-92945-V as alternate gene silencing products.

For independent verification of GCNT1 (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-92945A, sc-92945B and sc-92945C.

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

GCNT1 siRNA (h) is recommended for the inhibition of GCNT1 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 GCNT1 gene expression knockdown using RT-PCR Primer: GCNT1 (h)-PR: sc-92945-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.