

St3Gal-III siRNA (h): sc-88173

BACKGROUND

Cell type-specific expression of unique carbohydrate structures on cell surface glycoproteins and glycolipids provides information relevant to cell-cell interactions in developing and adult organisms. Sialyltransferases contribute to the diversity of carbohydrate structures through their attachment of sialic acid in various terminal positions on glycolipid and on glycoprotein (N-linked and O-linked) carbohydrate groups. The N-acetyllactosaminide α 2,3 sialyltransferase (ST3GAL-III), also known as SIAT6 and ST3GAL3, is a type II membrane protein that catalyzes the transfer of sialic acid from CMP-sialic acid to galactose-containing substrates. Localized to the Golgi apparatus and the Golgi stack membrane, St3Gal-III is secreted into the body fluid. 26 named isoforms of St3Gal-III exist as a result of alternative splicing events.

REFERENCES

1. Kitagawa, H. and Paulson, J.C. 1993. Cloning and expression of human Gal- β 1,3(4)GlcNAc α 2,3-sialyltransferase. *Biochem. Biophys. Res. Commun.* 194: 375-382.
2. Kitagawa, H. and Paulson, J.C. 1994. Differential expression of five sialyltransferase genes in human tissues. *J. Biol. Chem.* 269: 17872-17878.
3. Taniguchi, A., Yoshikawa, I. and Matsumoto, K. 2001. Genomic structure and transcriptional regulation of human Gal- β 1,3GalNAc α 2,3-sialyltransferase (hST3Gal-I) gene. *Glycobiology* 11: 241-247.
4. Wang, P.H., Li, Y.F., Juang, C.M., Lee, Y.R., Chao, H.T., Ng, H.T., Tsai, Y.C. and Yuan, C.C. 2002. Expression of sialyltransferase family members in cervix squamous cell carcinoma correlates with lymph node metastasis. *Gynecol. Oncol.* 86: 45-52.
5. Taniguchi, A., Saito, K., Kubota, T. and Matsumoto, K. 2003. Characterization of the promoter region of the human Gal- β 1,3(4)GlcNAc α 2,3-sialyltransferase III (hST3Gal-III) gene. *Biochim. Biophys. Acta* 1626: 92-96.
6. Gretschel, S., Haensch, W., Schlag, P.M. and Kemmner, W. 2003. Clinical relevance of sialyltransferases ST6GAL-I and ST3GAL-III in gastric cancer. *Oncology* 65: 139-145.
7. Grahn, A., Barkhordar, G.S. and Larson, G. 2004. Identification of seven new α 2,3-sialyltransferase III, ST3Gal-III, transcripts from human foetal brain. *Glycoconj. J.* 20: 493-500.
8. Wang, P.H., Lee, W.L., Juang, C.M., Yang, Y.H., Lo, W.H., Lai, C.R., Hsieh, S.L. and Yuan, C.C. 2005. Altered mRNA expressions of sialyltransferases in ovarian cancers. *Gynecol. Oncol.* 99: 631-639.
9. Online Mendelian Inheritance in Man, OMIM™. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 606494. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: ST3GAL3 (human) mapping to 1p34.1.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

PRODUCT

St3Gal-III siRNA (h) is a pool of 2 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see St3Gal-III shRNA Plasmid (h): sc-88173-SH and St3Gal-III shRNA (h) Lentiviral Particles: sc-88173-V as alternate gene silencing products.

For independent verification of St3Gal-III (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-88173A and sc-88173B.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

St3Gal-III siRNA (h) is recommended for the inhibition of St3Gal-III 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 μ M in 66 μ l. 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 St3Gal-III gene expression knockdown using RT-PCR Primer: St3Gal-III (h)-PR: sc-88173-PR (20 μ l, 511 bp). 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.