

St3Gal-II siRNA (h): sc-93118

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 to various terminal positions on glycolipid and glycoprotein (N-linked and O-linked) carbohydrate groups. St3Gal-II (St3 β -galactoside α -2,3-sialyltransferase 2), also known as SIAT4B, Gal-NAc6S, ST3GAL2 or ST3GalA.2, is a member of the glycosyltransferase 29 family of proteins. Predominantly expressed in heart and skeletal muscle, St3Gal-II exists as a single-pass membrane protein localizing to the Golgi apparatus. In addition to forward sialylation reactions (the transfer of NeuAc from CMP-NeuAc to galactose-containing substrates), St3Gal-II readily catalyzes reversible sialylation reactions (the transfer of NeuAc from sialylated donors to CMP (cytidine 5'-monophosphate)). This reverse reaction provides newly synthesized CMP-NeuAc which is then available for transfer to another acceptor.

REFERENCES

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3. Giordanengo, V., et al. 1997. Cloning and expression of cDNA for a human Gal(β 1-3)GalNAc α 2,3-sialyltransferase from the CEM T-cell line. *Eur. J. Biochem.* 247: 558-566.
4. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607188. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Saito, S., et al. 2003. Human α 2,3-sialyltransferase (ST3Gal II) is a stage-specific embryonic antigen-4 synthase. *J. Biol. Chem.* 278: 26474-26479.
6. Taniguchi, A., et al. 2003. Genomic structure, expression, and transcriptional regulation of human Gal β 1,3 GalNAc α 2,3-sialyltransferase gene. *Biochem. Biophys. Res. Commun.* 300: 570-576.

CHROMOSOMAL LOCATION

Genetic locus: ST3GAL2 (human) mapping to 16q22.1.

PRODUCT

St3Gal-II 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see St3Gal-II shRNA Plasmid (h): sc-93118-SH and St3Gal-II shRNA (h) Lentiviral Particles: sc-93118-V as alternate gene silencing products.

For independent verification of St3Gal-II (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-93118A, sc-93118B and sc-93118C.

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-II siRNA (h) is recommended for the inhibition of St3Gal-II 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.

GENE EXPRESSION MONITORING

St3Gal-II (34-K): sc-100856 is recommended as a control antibody for monitoring of St3Gal-II 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 St3Gal-II gene expression knockdown using RT-PCR Primer: St3Gal-II (h)-PR: sc-93118-PR (20 μ l). 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.

PROTOCOLS

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