

# St3Gal-IV siRNA (h): sc-106572

## 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  $\alpha$ 2,3 sialyltransferase (ST3Gal-IV), also known as SIAT4-C and SI4C, shows elevated expression in brain tissues. Sialyltransferase genes are dispersed throughout the human genome. The human SIAT4C gene maps to human chromosome 11q24.2 and encodes ST3Gal-IV. Multiple ST3Gal sialyltransferases, including ST3Gal-IV, contribute to selectin ligand formation. Selectin ligands are glycan structures that participate in leukocyte trafficking and inflammation. ST3Gal IV expression is downregulated in human renal cell carcinoma (RCC) and may be one of the factors associated with the malignant progression of human RCC.

## REFERENCES

1. Chang, M.L., et al. 1995. Three genes that encode human  $\beta$ -galactoside  $\alpha$  2,3-sialyltransferases. Structural analysis and chromosomal mapping studies. *Glycobiology* 5: 319-325.
2. Kitagawa, H., et al. 1996. Genomic organization and chromosomal mapping of the Gal  $\beta$  1,3GalNAc/Gal  $\beta$  1,4GlcNAc  $\alpha$  2,3-sialyltransferase. *J. Biol. Chem.* 271: 931-938.
3. Ellies, L.G., et al. 2002. Sialyltransferase specificity in selectin ligand formation. *Blood* 100: 3618-3625.
4. Saito, S., et al. 2002. Clinical significance of ST3Gal IV expression in human renal cell carcinoma. *Oncol. Rep.* 9: 1251-1255.

## CHROMOSOMAL LOCATION

Genetic locus: ST3GAL4 (human) mapping to 11q24.2.

## PRODUCT

St3Gal-IV 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see St3Gal-IV shRNA Plasmid (h): sc-106572-SH and St3Gal-IV shRNA (h) Lentiviral Particles: sc-106572-V as alternate gene silencing products.

For independent verification of St3Gal-IV (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-106572A, sc-106572B and sc-106572C.

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

## APPLICATIONS

St3Gal-IV siRNA (h) is recommended for the inhibition of St3Gal-IV 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  $\mu$ M in 66  $\mu$ 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-IV (1F4): sc-293406 is recommended as a control antibody for monitoring of St3Gal-IV 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 $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor St3Gal-IV gene expression knockdown using RT-PCR Primer: St3Gal-IV (h)-PR: sc-106572-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Zhou, H., et al. 2017. Downregulation of miR-224 and let-7i contribute to cell survival and chemoresistance in chronic myeloid leukemia cells by regulating St3Gal-IV expression. *Gene* 626: 106-118.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.