SANTA CRUZ BIOTECHNOLOGY, INC.

ST6GAL1 siRNA (m): sc-42805

BACKGROUND

Modification of cell surface glycoprotein and glycolipid oligosaccharides is thought to play a role in tumorigenesis and metastasis. Sialyltransferases catalyze the incorporation of sialic acid into the carbohydrate chains present on glycoproteins and function in intracellular terminal glycosylation pathways. The expression of one such sialyltransferase, CD75, (also known as ST6GAL1), leads to the appearance of the cell surface antigens CD76, HB-6 and CDw75. Expressed in the Golgi apparatus and secreted into the extracellular fluid, CD75 is a type II membrane protein that is involved in generating sialylated antigens that function as cell-surface carbohydrate determinants. One such antigen, CDw75 (also known as CD75s or CD75-sialyated), is formed via the catalytic transfer of a sialic acid residue from CD75 to a cell surface galactose-containing carbohydrate acceptor. While CD75 functions in cells throughout the body, CDw75 is found primarily on B and T cells and may be upregulated in B cell leukemias, suggesting a possible role for CDw75 in carcinogenesis.

REFERENCES

1. Epstein, A.L. et al. 1987. Two new monoclonal antibodies, Lym-1 and Lym-2, reactive with human B-lymphocytes and derived tumors, with immunodiagnostic and immunotherapeutic potential. Cancer Res. 47: 830-840.
2. Stamenkovic, I., et al. 1991. The B lymphocyte adhesion molecule CD22 interacts with leukocyte common antigen CD45RO on T cells and α 2-6 sialyltransferase, CD75, on B cells. Cell 66: 1133-1144.
3. Erikstein, B.K., et al. 1992. Cell cycle-dependent regulation of CDw75 (β-galactoside α-2, 6-sialyltransferase) on human B lymphocytes. Eur. J. Immunol. 22: 1149-1155.
4. Bast, B.J., et al. 1992. The HB6, CDw75, and CD76 differentiation antigens are unique cell-surface carbohydrate determinants generated by the β-galactoside α 2,6-sialyltransferase. J. Cell Biol. 116: 423-435.
5. De Lau, W.B., et al. 1993. HB4 antibody recognizes a carbohydrate structure on lymphocyte surface proteins related to HB6, CDw75, and CD76 antigens. J. Immunol. 150: 4911-4919.
6. David, L., et al. 1993. CDw75 antigen expression in human gastric carcinoma and adjacent mucosa. Cancer 72: 1522-1527.

CHROMOSOMAL LOCATION

Genetic locus: St6gal1 (mouse) mapping to 16 B1.

PRODUCT

ST6GAL1 siRNA (m) 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 ST6GAL1 shRNA Plasmid (m): sc-42805-SH and ST6GAL1 shRNA (m) Lentiviral Particles: sc-42805-V as alternate gene silencing products.

For independent verification of ST6GAL1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-42805A, sc-42805B and sc-42805C.

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

ST6GAL1 siRNA (m) is recommended for the inhibition of ST6GAL1 expression in mouse 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 ST6GAL1 gene expression knockdown using RT-PCR Primer: ST6GAL1 (m)-PR: sc-42805-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Zhang, Z., et al. 2013. Modification of glycosylation mediates the invasive properties of murine hepatocarcinoma cell lines to lymph nodes. PLoS ONE 8: e65218.

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.