

ST6GAL1 (LN-1): sc-6263



The Power to Question

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-sialylated), 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.* 2: 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.

CHROMOSOMAL LOCATION

Genetic locus: ST6GAL1 (human) mapping to 3q27.3; St6gal1 (mouse) mapping to 16 B1.

SOURCE

ST6GAL1 (LN-1) is a mouse monoclonal antibody raised against pokeweed mitogen stimulated peripheral mononuclear cells.

PRODUCT

Each vial contains 200 μ g IgM in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ST6GAL1 (LN-1) is available conjugated to either phycoerythrin (sc-6263 PE) or fluorescein (sc-6263 FITC), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

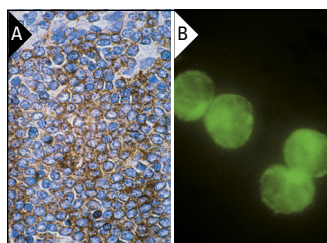
APPLICATIONS

ST6GAL1 (LN-1) is recommended for detection of ST6GAL1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 μ g per 1 x 10⁶ cells).

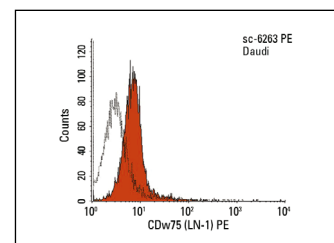
Molecular Weight of ST6GAL1: 46 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

DATA



ST6GAL1 (LN-1): sc-6263. Immunoperoxidase staining of formalin-fixed, paraffin-embedded normal human spleen showing membrane and cytoplasmic localization (A). Immunofluorescence staining of methanol-fixed Ramos cells showing membrane localization (B).



ST6GAL1 (LN-1) PE: sc-6263 PE. FCM analysis of Daudi cells. Black line histogram represents the isotype control, normal mouse IgM-PE: sc-2870.

SELECT PRODUCT CITATIONS

1. Franco, D.L., et al. 2002. Osmotic stress sensitizes naturally resistant cells to TNF- α -induced apoptosis. *Cell Death Differ.* 9: 1090-1098.
2. Wang, X., et al. 2014. Overexpression of α (1,6) fucosyltransferase associated with aggressive prostate cancer. *Glycobiology* 24: 935-944.
3. Cui, Y., et al. 2015. Huaier aqueous extract induces apoptosis of human fibrosarcoma HT1080 cells through the mitochondrial pathway. *Oncol. Lett.* 9: 1590-1596.
4. Liu, N., et al. 2018. Increasing HER2 α -2,6 sialylation facilitates gastric cancer progression and resistance via the Akt and ERK pathways. *Oncol. Rep.* 40: 2997-3005.
5. Schötterl, S., et al. 2019. Mistletoe-based drugs work in synergy with radio-chemotherapy in the treatment of glioma *in vitro* and *in vivo* in glioblastoma bearing mice. *Evid. Based Complement. Alternat. Med.* 2019: 1376140.
6. Halder, B., et al. 2022. The incorrect use of CD75 as a synonym for ST6GAL1 has fostered the expansion of commercial "ST6GAL1" antibodies that do not recognize ST6GAL1. *Glycobiology* 32: 736-742.

RESEARCH USE

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