

Sialyltransferase 7F (P-19): sc-68816

BACKGROUND

Sialyltransferase 7F, also known as SIAT7F and ST6GalNAc VI, is a 333 amino acid Golgi type II transmembrane glycosyltransferase expressed in the proximal tubule epithelial cells of kidney. Sialyltransferase 7F belongs to the ST6GalNAc family of sialyltransferases involved in the biosynthesis of α -series gangliosides. Gangliosides are glycosphingolipids with sialic acids in the carbohydrate portion and are critical components to a variety of cellular events including cell adhesion, protein targeting, cell-cell interaction and mediation of invasion of vectors. Sialyltransferase 7F acts on the substrates GD1a, GT1b and GM1b, and is responsible for the biosynthesis of DSGG (disialylgalactosylgloboside) from MSGG (monosialylgalactosylgloboside) in kidney. In addition, Sialyltransferase 7E can catalyze the synthesis of disialyl Lc4 from sialyl Lc4, leading to the synthesis of disialyl Lewis a.

REFERENCES

- Okajima, T., Chen, H.H., Ito, H., Kiso, M., Tai, T., Furukawa, K., Urano, T. and Furukawa, K. 2000. Molecular cloning and expression of mouse GD1 α /GT1a α /GQ1b α synthase (ST6GalNAc VI) gene. *J. Biol. Chem.* 275: 6717-6723.
- Tsuhida, A., Okajima, T., Furukawa, K., Ando, T., Ishida, H., Yoshida, A., Nakamura, Y., Kannagi, R., Kiso, M. and Furukawa, K. 2003. Synthesis of disialyl Lewis a (Le^a) structure in colon cancer cell lines by a sialyltransferase, ST6GalNAc VI, responsible for the synthesis of α -series gangliosides. *J. Biol. Chem.* 278: 22787-22794.
- Harduin-Lepers, A., Mollicone, R., Delannoy, P. and Oriol, R. 2005. The animal sialyltransferases and sialyltransferase-related genes: a phylogenetic approach. *Glycobiology* 15: 805-817.
- Patel, R.Y. and Balaji, P.V. 2006. Identification of linkage-specific sequence motifs in sialyltransferases. *Glycobiology* 16: 108-116.
- Online Mendelian Inheritance in Man, OMIM[™]. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 610135. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Senda, M., Ito, A., Tsuhida, A., Hagiwara, T., Kaneda, T., Nakamura, Y., Kasama, K., Kiso, M., Yoshikawa, K., Katagiri, Y., Ono, Y., Ogiso, M., Urano, T., Furukawa, K., Oshima, S. and Furukawa, K. 2007. Identification and expression of a sialyltransferase responsible for the synthesis of disialylgalactosylgloboside in normal and malignant kidney cells: downregulation of ST6GalNAc VI in renal cancers. *Biochem. J.* 402: 459-470.
- Pai, T., Chen, Q., Zhang, Y., Zolfaghari, R. and Ross, A.C. 2007. Galactomutase and other galactose-related genes are rapidly induced by retinoic acid in human myeloid cells. *Biochemistry* 46: 15198-15207.
- Bos, P.D., Zhang, X.H., Nadal, C., Shu, W., Gomis, R.R., Nguyen, D.X., Minn, A.J., van de Vijver, M.J., Gerald, W.L., Foekens, J.A. and Massagué, J. 2009. Genes that mediate breast cancer metastasis to the brain. *Nature* 59:1005-1009.

CHROMOSOMAL LOCATION

Genetic locus: ST6GALNAC6 (human) mapping to 9q34.11; St6galnac6 (mouse) mapping to 2 B.

SOURCE

Sialyltransferase 7F (P-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Sialyltransferase 7F of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-68816 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Sialyltransferase 7F (P-19) is recommended for detection of Sialyltransferase 7F of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Sialyltransferase 7F (P-19) is also recommended for detection of Sialyltransferase 7F in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for Sialyltransferase 7F siRNA (h): sc-63022, Sialyltransferase 7F siRNA (m): sc-63023, Sialyltransferase 7F shRNA Plasmid (h): sc-63022-SH, Sialyltransferase 7F shRNA Plasmid (m): sc-63023-SH, Sialyltransferase 7F shRNA (h) Lentiviral Particles: sc-63022-V and Sialyltransferase 7F shRNA (m) Lentiviral Particles: sc-63023-V.

Molecular Weight of Sialyltransferase 7F: 38 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker[™] compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker[™] Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz[™] Mounting Medium: sc-24941.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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