SANTA CRUZ BIOTECHNOLOGY, INC.

C1GALT1 (F-31): sc-100745

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

C1GALT1 (core 1 synthase, glycoprotein-N-acetylgalactosamine 3-β-galactosyltransferase, 1), also known as T-synthase, is a single-pass type II membrane protein that is involved in various protein modification pathways. Widely expressed and present at high amounts in heart, kidney, liver and placenta, C1GALT1 functions to generate the core of 1 β-3-galactosyltransferase, an enzyme that transfers galactose from UDP-Gal to Gal-NAc-α-1-O-phenyl and is a precursor for many glycoproteins. C1GALT1 binds magnesium as a cofactor and also participates in development of kidney homeostasis, as well as angiogenesis and thrombopoiesis. Defects in the gene encoding C1GALT1 are associated with IgA nephropathy (IgAN), a condition characterized by accumulation of the IgA antibody in the glomerulus, leading to immune-mediated renal disease. Two isoforms of C1GALT1 exist due to alternative splicing events.

REFERENCES

1. Amado, M., et al. 1999. Identification and characterization of large galactosyltransferase gene families: galactosyltransferases for all functions. Biochim. Biophys. Acta 1473: 35-53.
2. Ju, T., et al. 2002. Cloning and expression of human core 1 β1,3-galactosyltransferase. J. Biol. Chem. 277: 178-186.

CHROMOSOMAL LOCATION

Genetic locus: C1GALT1 (human) mapping to 7p22.1.

SOURCE

C1GALT1 (F-31) is a mouse monoclonal antibody raised against amino acids 264-364 mapping near the C-terminus of C1GALT1 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

C1GALT1 (F-31) is recommended for detection of C1GALT1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for C1GALT1 siRNA (h): sc-72690, C1GALT1 shRNA Plasmid (h): sc-72690-SH and C1GALT1 shRNA (h) Lentiviral Particles: sc-72690-V.

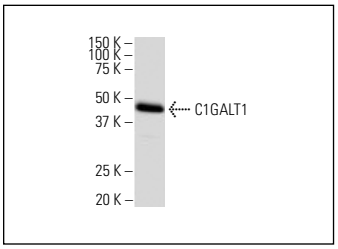
Molecular Weight of C1GALT1: 42 kDa.

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

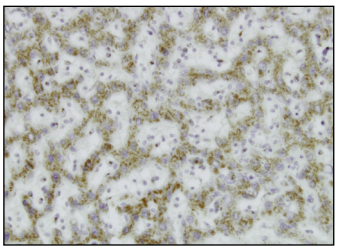
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



C1GALT1 (F-31): sc-100745. Western blot analysis of C1GALT1 expression in HeLa whole cell lysate.



C1GALT1 (F-31): sc-100745. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human hepatocellular carcinoma tissue showing membrane localization.

SELECT PRODUCT CITATIONS

1. Jiang, Y., et al. 2018. Aberrant O-glycosylation contributes to tumorigenesis in human colorectal cancer. J. Cell. Mol. Med. 22: 4875-4885.
2. Liu, Z., et al. 2019. Tn antigen promotes human colorectal cancer metastasis via H-Ras mediated epithelial-mesenchymal transition activation. J. Cell. Mol. Med. 23: 2083-2092.
3. Radziejewska, I., et al. 2021. Anti-cancer effect of combined action of anti-MUC1 and rosmarinic acid in AGS gastric cancer cells. Eur. J. Pharmacol. 902: 174119.
4. Radziejewska, I., et al. 2021. Anti-cancer potential of afzelin towards AGS gastric cancer cells. Pharmaceuticals 14: 973.
5. Khiaowichit, J., et al. 2022. Down-regulation of C1GALT1 enhances the progression of cholangiocarcinoma through activation of AKT/ERK signaling pathways. Life 12: 174.
6. Matsumoto, Y., et al. 2022. Identification and characterization of circulating immune complexes in IgA nephropathy. Sci. Adv. 8: eabm8783.
7. Ilani, T., et al. 2022. The disulfide catalyst QSOX1 maintains the colon mucosal barrier by regulating Golgi glycosyltransferases. EMBO J. E-published.

STORAGE

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