SANTA CRUZ BIOTECHNOLOGY, INC.

GlcAT-I (D-7): sc-390475

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

GlcAT-I (glucuronosyltransferase-I), also known as β-1,3-glucuronyltransferase 3 (B3GAT3), is a 335 amino acid single-pass type II membrane protein belonging to the glycosyltransferase 43 family. By using manganese as a cofactor, GlcAT-I catalyzes the formation of the glycosaminoglycan-protein linkage by way of a glucuronyl transfer reaction that is present in the final step of the biosynthesis of the linkage region of proteoglycans. Present as a disulfide-linked homodimer, GlcAT-I shows strict specificity for Gal-β-1,3-Gal-β-1,4-Xyl. Ubiquitously expressed, GlcAT-I is N-glycosylated and is localized to the Golgi apparatus membrane.

REFERENCES

1. Kitagawa, H., et al. 1998. Molecular cloning and expression of glucuronyltransferase I involved in the biosynthesis of the glycosaminoglycan-protein linkage region of proteoglycans. J. Biol. Chem. 273: 6615-6618.
2. Tone, Y., et al. 1999. Characterization of recombinant human glucuronyltransferase I involved in the biosynthesis of the glycosaminoglycan-protein linkage region of proteoglycans. FEBS Lett. 459: 415-420.
3. Ouzzine, M., et al. 2000. Structure/function of the human Galβ1,3-glucuronosyltransferase. Dimerization and functional activity are mediated by two crucial cysteine residues. J. Biol. Chem. 275: 28254-28260.
4. Pedersen, L.C., et al. 2000. Heparan/chondroitin sulfate biosynthesis. Structure and mechanism of human glucuronyltransferase I. J. Biol. Chem. 275: 34580-34585.
5. Gulberti, S., et al. 2003. The functional glycosyltransferase signature sequence of the human β 1,3-glucuronosyltransferase is a XDD motif. J. Biol. Chem. 278: 32219-32226.
6. Venkatesan, N., et al. 2004. Stimulation of proteoglycan synthesis by glucuronosyltransferase-I gene delivery: a strategy to promote cartilage repair. Proc. Natl. Acad. Sci. USA 101: 18087-18092.

CHROMOSOMAL LOCATION

Genetic locus: B3GAT3 (human) mapping to 11q12.3; B3gat3 (mouse) mapping to 19 A.

SOURCE

GlcAT-I (D-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 323-334 at the C-terminus of GlcAT-I of human origin.

PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-390475 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

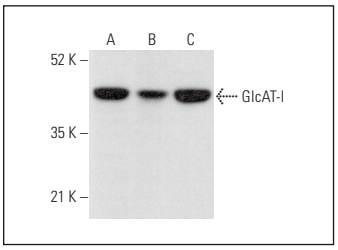
GlcAT-I (D-7) is recommended for detection of GlcAT-I of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 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 GlcAT-I siRNA (h): sc-96989, GlcAT-I siRNA (m): sc-145416, GlcAT-I shRNA Plasmid (h): sc-96989-SH, GlcAT-I shRNA Plasmid (m): sc-145416-SH, GlcAT-I shRNA (h) Lentiviral Particles: sc-96989-V and GlcAT-I shRNA (m) Lentiviral Particles: sc-145416-V.

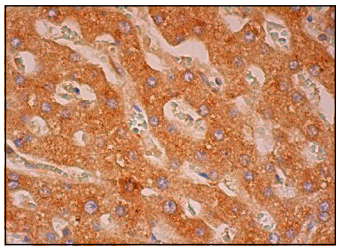
Molecular Weight of GlcAT-I: 37 kDa.

Positive Controls: CCRF-CEM cell lysate: sc-2225, MCF7 whole cell lysate: sc-2206 or U-87 MG cell lysate: sc-2411.

DATA



GlcAT-I (D-7): sc-390475. Western blot analysis of GlcAT-I expression in CCRF-CEM (**A**), MCF7 (**B**) and U-87 MG (**C**) whole cell lysates.



GlcAT-I (D-7): sc-390475. Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic staining of hepatocytes.

SELECT PRODUCT CITATIONS

1. Song, N., et al. 2021. N-Glycans and sulfated glycosaminoglycans contribute to the action of diverse Tc toxins on mammalian cells. PLoS Pathog. 17: e1009244.
2. Hobohm, L., et al. 2022. N-terminome analyses underscore the prevalence of SPPL3-mediated intramembrane proteolysis among Golgi-resident enzymes and its role in Golgi enzyme secretion. Cell. Mol. Life Sci. 79: 185.

STORAGE

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

PROTOCOLS

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