

GAL3ST1 (N-13): sc-86462

BACKGROUND

Galactosylceramide sulfotransferase (GAL3ST1), also designated cerebroside sulfotransferase (CST), is a 521 amino acid enzyme that catalyzes the 3'-sulfation of galactose residues in several glycolipids. Two of its major products include seminolipid, which is required for spermatogenesis, and sulfatide, which is an essential myelin component. In kidney, sulfatide interacts with L-Selectin to play a role in monocyte infiltration into the kidney interstitium. Disruption of the GAL3ST1 gene in mice results in neurological disorders due to myelin dysfunction, an aberrant enhancement of oligodendrocyte terminal differentiation and an arrest of spermatogenesis resulting in male infertility. GAL3ST1 is expressed in the normal tissues of stomach, small intestine, brain, kidney, lung and testis. Interestingly, GAL3ST1 is also highly expressed in human renal cancer cells.

REFERENCES

- Hirahara, Y., Tsuda, M., Wada, Y. and Honke, K. 2000. cDNA cloning, genomic cloning, and tissue-specific regulation of mouse cerebroside sulfotransferase. *Eur. J. Biochem.* 267: 1909-1917.
- Tsuda, M., Egashira, M., Niikawa, N., Wada, Y. and Honke, K. 2000. Cancer-associated alternative usage of multiple promoters of human GalCer sulfotransferase gene. *Eur. J. Biochem.* 267: 2672-2679.
- Honke, K., Hirahara, Y., Dupree, J., Suzuki, K., Popko, B., Fukushima, K., Fukushima, J., Nagasawa, T., Yoshida, N., Wada, Y. and Taniguchi, N. 2002. Paranodal junction formation and spermatogenesis require sulfoglycolipids. *Proc. Natl. Acad. Sci. USA* 99: 4227-4232.
- Ogawa, D., Shikata, K., Honke, K., Sato, S., Matsuda, M., Nagase, R., Tone, A., Okada, S., Usui, H., Wada, J., Miyasaka, M., Kawashima, H., Suzuki, Y., Suzuki, T., Taniguchi, N., Hirahara, Y., Tadano-Aritomi, K., Ishizuka, I., Tedder, T.F. and Makino, H. 2004. Cerebroside sulfotransferase deficiency ameliorates L-Selectin-dependent monocyte infiltration in the kidney after ureteral obstruction. *J. Biol. Chem.* 279: 2085-2090.
- Honke, K., Zhang, Y., Cheng, X., Kotani, N. and Taniguchi, N. 2004. Biological roles of sulfoglycolipids and pathophysiology of their deficiency. *Glycoconj. J.* 21: 59-62.
- Zhang, Y., Hayashi, Y., Cheng, X., Watanabe, T., Wang, X., Taniguchi, N. and Honke, K. 2005. Testis-specific sulfoglycolipid, seminolipid, is essential for germ cell function in spermatogenesis. *Glycobiology* 15: 649-654.
- Yaghootfam, A., Sorkalla, T., Haberlein, H., Gieselmann, V., Kappler, J. and Eckhardt, M. 2007. Cerebroside sulfotransferase forms homodimers in living cells. *Biochemistry* 46: 9260-9269.

CHROMOSOMAL LOCATION

Genetic locus: GAL3ST1 (human) mapping to 22q12.2.

SOURCE

GAL3ST1 (N-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an N-terminal extracellular domain of GAL3ST1 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-86462 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

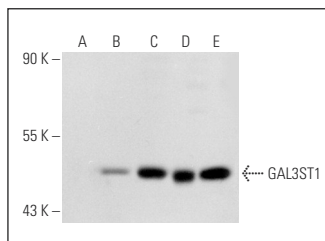
GAL3ST1 (N-13) is recommended for detection of GAL3ST1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for GAL3ST1 siRNA (h): sc-75081, GAL3ST1 shRNA Plasmid (h): sc-75081-SH and GAL3ST1 shRNA (h) Lentiviral Particles: sc-75081-V.

Molecular Weight of GAL3ST1: 49 kDa.

Positive Controls: THP-1 cell lysate: sc-2238, Daudi cell lysate: sc-2415 or GAL3ST1 (h2): 293T Lysate: sc-128678.

DATA



GAL3ST1 (N-13): sc-86462. Western blot analysis of GAL3ST1 expression in non-transfected 293T: sc-117752 (A), human GAL3ST1 transfected 293T: sc-128678 (B), THP-1 (C), Daudi (D) and HT-1080 (E) whole cell lysates.

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.