SANTA CRUZ BIOTECHNOLOGY, INC.

CD77 synthase (1.BB.557): sc-70784

BACKGROUND

Expression of CD77, also called GB3, sensitizes a cell to verotoxins, causing cellular injury that can lead to disease. Therefore, the complex regulation of CD77 biosynthesis and the activity of the enzymes involved, such as CD77 synthase, can be studied by compared gene expression between toxin-sensitive and insensitive tissues and cell lines. The highest tissue expression of CD77 synthase occurs in the kidney, mesenteric lymph node, spleen and brain. Burkitt leukemia cells express very high levels of CD77 as well as CD77 synthase, and are sensitive to verotoxin induced apoptosis. These megakaryoblasts then never mature, leading to the arrest of platelet generation in the bone marrow, which may cause thrombocytopenia, a symptom associated with various hemorrhagic conditions.

REFERENCES

1. Kojima, Y., et al. 2000. Molecular cloning of globotriaosylceramide/CD77 synthase, a glycosyltransferase that initiates the synthesis of globo series glycosphingolipids. J. Biol. Chem. 275: 15152-15156.
2. Keusch, J.J., et al. 2000. Cloning of Gb3 synthase, the key enzyme in globo-series glycosphingolipid synthesis, predicts a family of α1, 4-glycosyltransferases conserved in plants, insects, and mammals. J. Biol. Chem. 275: 25315-25321.
3. Okajima, T., et al. 2000. Expression cloning of human globoside synthase cDNAs. Identification of β 3Gal-T3 as UDP-N-acetylgalactosamine:globotriaosylceramide β1,3-N-acetylgalactosaminyltransferase. J. Biol. Chem. 275: 40498-40503.
4. Hughes, A.K., et al. 2002. Molecular basis for high renal cell sensitivity to the cytotoxic effects of shigatoxin-1: upregulation of globotriaosylceramide expression. J. Am. Soc. Nephrol. 13: 2239-4225.
5. Furukawa, K., et al. 2002. Expression of the Gb3/CD77 synthase gene in megakaryoblastic leukemia cells: implication in the sensitivity to verotoxins. J. Biol. Chem. 277: 11247-11254.
6. Iwamura K, et al. 2003. The blood group P1 synthase gene is identical to the Gb3/CD77 synthase gene. A clue to the solution of the P1/P2/p puzzle. J. Biol. Chem. 278: 44429-44438.
7. Fujii, Y., et al. 2005. Murine glycosyltransferases responsible for the expression of globo-series glycolipids: cDNA structures, mRNA expression, and distribution of their products. Glycobiology 15: 1257-1267.
8. Okuda, T., et al. 2006. Targeted disruption of Gb3/CD77 synthase gene resulted in the complete deletion of globo-series glycosphingolipids and loss of sensitivity to verotoxins. J. Biol. Chem. 281: 10230-10235.

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 or our catalog for detailed protocols and support products.

CHROMOSOMAL LOCATION

Genetic locus: A4GALT (human) mapping to 22q13.2.

SOURCE

CD77 synthase (1.BB.557) is a rat monoclonal antibody raised against Daudi Burkitt's lymphoma cell line of human origin.

PRODUCT

Each vial contains IgM in 1 ml of PBS with 0.09% sodium azide and 0.2% BSA.

APPLICATIONS

CD77 synthase (1.BB.557) is recommended for detection of CD77 synthase of human origin by immunofluorescence (starting dilution to be determined by researcher, dilution range 1:50-1:200) and flow cytometry (5-10 µl per 1 x 10^6 cells).

Suitable for use as control antibody for CD77 synthase siRNA (h): sc-72831, CD77 synthase shRNA Plasmid (h): sc-72831-SH and CD77 synthase shRNA (h) Lentiviral Particles: sc-72831-V.

Molecular Weight of CD77 synthase: 40 kDa.

RESEARCH USE

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