SANTA CRUZ BIOTECHNOLOGY, INC.

GM2/GD2 Synthase (17-L): sc-100532

BACKGROUND

GM2/GD2 Synthase is a 533 amino acid protein encoded by the human gene B4GALNT1. The GM2 and GD2 gangliosides are sialic acid-containing glycosphingolipids that play a role in signal transduction and cell-cell recognition. GM2/GD2 Synthase is expressed abundantly in normal brain tissue of vertebrates. It contains a single 18 amino acid hydrophobic segment near the amino-terminus flanked by basic residues. GM2/GD2 Synthase primarily controls the balance between expression of simple and complex gangliosides at the cell surface. The ganglioside GD2 is expressed using GM2/GD2 Synthase in almost all neuroblastomas (NBs) as well as other neuroectoderm-derived tumor cells, such as malignant melanoma, adult T cell leukemia and some colon and gastric cancers. GM2/GD2 Synthase is a useful marker for NBs and may aid in evaluating adjuvant treatment efficacy in neuroblastoma with prognostic potential.

REFERENCES

1. Jacques, S., et al. 2005. Chemoenzymatic synthesis of GM3 and GM2 gangliosides containing a truncated ceramide functionalized for glycoconjugate synthesis and solid phase applications. Org. Biomol. Chem. 4: 142-154.
2. Marconi, S., et al. 2005. Expression of gangliosides on glial and neuronal cells in normal and pathological adult human brain. J. Neuroimmunol. 170: 115-121.
3. Saha, S., et al. 2005. Gangliosides enhance migration of mouse B16-melanoma cells through artificial basement membrane alone or in presence of Laminin or Fibronectin. Indian J. Exp. Biol. 43: 1130-1138.
4. Wu, G., et al. 2005. Enhanced susceptibility to kainate-induced seizures, neuronal apoptosis, and death in mice lacking gangliotetraose gangliosides: protection with LIGA 20, a membrane-permeant analog of GM1. J. Neurosci. 25: 11014-11022.
5. Zhang, J., et al. 2005. Gangliosides activate the phosphatase activity of the erythrocyte plasma membrane Ca^{2+}-ATPase. Arch. Biochem. Biophys. 444: 1-6.
6. Arfi, A., et al. 2006. Reversion of the biochemical defects in murine embryonic Sandhoff neurons using a bicistronic lentiviral vector encoding hexosaminidase α and β. J. Neurochem. 96: 1572-1579.
7. Dyatlovitskaya, E.V. and Kandyba, A.G. 2006. Role of biologically active sphingolipids in tumor growth. Biochemistry Mosc. 71: 10-17.

CHROMOSOMAL LOCATION

Genetic locus: B4GALNT1 (human) mapping to 12q13.2; B4galnt1 (mouse) mapping to 10 D3.

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.

SOURCE

GM2/GD2 Synthase (17-L) is a mouse monoclonal antibody raised against recombinant GM2/GD2 Synthase of human origin.

PRODUCT

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

APPLICATIONS

GM2/GD2 Synthase (17-L) is recommended for detection of GM2/GD2 Synthase of mouse, rat and 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for GM2/GD2 Synthase siRNA (h): sc-105401, GM2/GD2 Synthase siRNA (m): sc-77390, GM2/GD2 Synthase shRNA Plasmid (h): sc-105401-SH, GM2/GD2 Synthase shRNA Plasmid (m): sc-77390-SH, GM2/GD2 Synthase shRNA (h) Lentiviral Particles: sc-105401-V and GM2/GD2 Synthase shRNA (m) Lentiviral Particles: sc-77390-V.

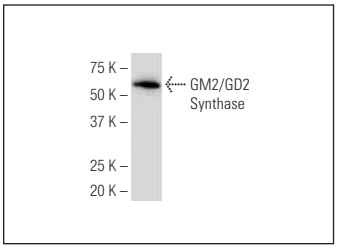
Molecular Weight of GM2/GD2 Synthase: 59 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, mouse brain extract: sc-2253 or rat brain extract: sc-2392.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



GM2/GD2 Synthase (17-L): sc-100532. Western blot analysis of GM2/GD2 Synthase expression in HeLa whole cell lysate.

PROTOCOLS

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