SANTA CRUZ BIOTECHNOLOGY, INC.

GM2/GD2 Synthase (C-5): sc-376505

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

CHROMOSOMAL LOCATION

Genetic locus: B4GALNT1 (human) mapping to 12q13.3; B4galnt1 (mouse) mapping to 10 D3.

SOURCE

GM2/GD2 Synthase (C-5) is a mouse monoclonal antibody raised against amino acids 1-180 mapping at the N-terminus of GM2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GM2/GD2 Synthase (C-5) is available conjugated to agarose (sc-376505 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376505 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376505 PE), fluorescein (sc-376505 FITC), Alexa Fluor® 488 (sc-376505 AF488), Alexa Fluor® 546 (sc-376505 AF546), Alexa Fluor® 594 (sc-376505 AF594) or Alexa Fluor® 647 (sc-376505 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376505 AF680) or Alexa Fluor® 790 (sc-376505 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

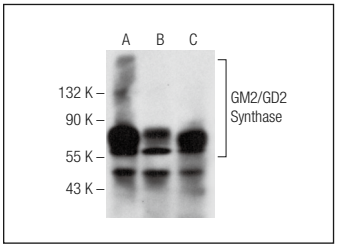
GM2/GD2 Synthase (C-5) is recommended for detection of GM2/GD2 Synthase of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) 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 siRNA (r): sc-270209, GM2/GD2 Synthase shRNA Plasmid (h): sc-105401-SH, GM2/GD2 Synthase shRNA Plasmid (m): sc-77390-SH, GM2/GD2 Synthase shRNA Plasmid (r): sc-270209-SH, GM2/GD2 Synthase shRNA (h) Lentiviral Particles: sc-105401-V, GM2/GD2 Synthase shRNA (m) Lentiviral Particles: sc-77390-V and GM2/GD2 Synthase shRNA (r) Lentiviral Particles: sc-270209-V.

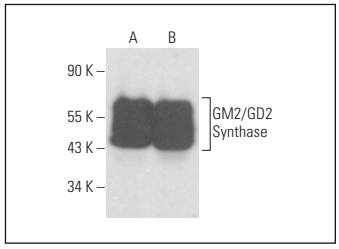
Molecular Weight of GM2/GD2 Synthase: 59 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Hep G2 cell lysate: sc-2227 or IMR-32 cell lysate: sc-2409.

DATA



GM2/GD2 Synthase (C-5): sc-376505. Western blot analysis of GM2/GD2 Synthase expression in IMR-32 (**A**), SK-N-SH (**B**) and A549 (**C**) whole cell lysates.



GM2/GD2 Synthase (C-5): sc-376505. Western blot analysis of GM2/GD2 Synthase expression in HeLa (**A**) and Hep G2 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Yamaguchi, T., et al. 2016. Expression of B4GALNT1, an essential glycosyltransferase for the synthesis of complex gangliosides, suppresses BACE1 degradation and modulates APP processing. Sci. Rep. 6: 34505.
2. Liu, Q., et al. 2018. MiR-98-5p promotes osteoblast differentiation in MC3T3-E1 cells by targeting CKIP-1. Mol. Med. Rep. 17: 4797-4802.
3. Takeuchi, R., et al. 2019. TNFα-signal and cAMP-mediated signals oppositely regulate melanoma-associated ganglioside GD3 Synthase gene in human melanocytes. Sci. Rep. 9: 14740.
4. Yesmin, F., et al. 2020. Aminoglycosides are efficient reagents to induce readthrough of premature termination codon in mutant B4GALNT1 genes found in families of hereditary spastic paraplegia. J. Biochem. 168: 103-112.

RESEARCH USE

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