

Ganglioside GD3 (4i262): sc-71138

BACKGROUND

Gangliosides are membrane-bound, sialic acid-containing glycosphingolipids that play a significant role in determining the nature of tetraspanin interactions. Ganglioside GD3 is produced by the transfer of sialic acid from CMP-sialic acid to GM3. This reaction is catalyzed by the type II membrane protein GD3 Synthase. Ganglioside GD3 is known to be important for cell adhesion and growth of cultured malignant cells. It is found in most normal tissues, and its expression increases under pathological conditions and during development and aging processes. In malignant melanoma cells, Ganglioside GD3 is involved in the upregulation of tyrosine phosphorylation for p130 Cas and paxillin. Ganglioside GD3 also mediates apoptosis, functioning as a regulatory molecule and contributing to mitochondrial damage. The level of Ganglioside GD3 present in a cell plays a significant role in determining cell fate.

REFERENCES

1. Swords, N.A., et al. 1991. Protein-chromophore interactions in bacteriorhodopsin: the effects of a change in surface potential. *Biochim. Biophys. Acta* 1070: 313-320.
2. Malisan, F., et al. 2002. GD3 in cellular ageing and apoptosis. *Exp. Gerontol.* 37: 1273-1282.
3. Furukawa, K., et al. 2006. Biosignals modulated by tumor-associated carbohydrate antigens: novel targets for cancer therapy. *Ann. N.Y. Acad. Sci.* 1086: 185-198.
4. Nakashima, H., et al. 2007. Overexpression of caveolin-1 in a human melanoma cell line results in dispersion of ganglioside GD3 from lipid rafts and alteration of leading edges, leading to attenuation of malignant properties. *Cancer Sci.* 98: 512-520.
5. Kang, S.K., et al. 2007. Disialoganglioside GD3 increases in the secretion of apoB-containing lipoproteins. *Biochem. Biophys. Res. Commun.* 356: 418-423.
6. Rimoldi, S., et al. 2007. Molecular cloning and expression of α 2,8-sialyltransferase (ST8Sia I, GD3 Synthase) in *Xenopus*. *Mol. Cell. Biochem.* 301: 143-153.
7. Denny, C.A., et al. 2007. Neurochemical, morphological, and neurophysiological abnormalities in retinas of Sandhoff and GM1 gangliosidosis mice. *J. Neurochem.* 101: 1294-1302.
8. Yang, C.R., et al. 2007. Inhibition of neuronal migration by JONES antibody is independent of 9-O-acetyl GD3 in GD3-synthase knockout mice. *J. Neurosci. Res.* 85: 1381-1390.
9. Blackhall, F.H., et al. 2007. Small cell lung cancer and targeted therapies. *Curr. Opin. Oncol.* 19: 103-108.

SOURCE

Ganglioside GD3 (4i262) is a mouse monoclonal antibody raised against Ganglioside GD3.

PRODUCT

Each vial contains 200 μ g IgG₃ in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Ganglioside GD3 (4i262) is recommended for detection of Ganglioside GD3 by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500); may cross-react with 9-O-AcGD3 Ganglioside and GT1a Ganglioside.

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 for detailed protocols and support products.