PRODUCT DATA SHEET

Anti-ganglioside GM_1

Catalog No: 1954
Common Name: Polyclonal antibody to GM_1, Isotype IgG/IgM
Host: Rabbit
Preparation: Purified ganglioside GM_1 and complete Freund's adjuvant was used to immunize rabbits. Serum containing IgG/IgM was isolated[1]
Limit of Detection: Optimal ELISA ca. 50ng
Quality Control: ELISA and TLC immunoblotting with peroxidase reaction[2]
Selectivity: No cross-reaction with other carbohydrate epitopes
Storage: -20°C
Stability: 3-4 months when refrigerated; 2-3 days at room temperature
Dilution: Phosphate buffered saline (pH 7.4) is recommended
Preservatives: None

Application notes:

Anti-ganglioside GM_1 is very useful in the identification of ganglioside GM_1 and in immunotargeting cells expressing GM_1. Several gangliosides have been found to have an elevated expression in tumor cells. Many therapeutic treatments of tumor cells are being investigated using antibodies to target cells that express these elevated levels of gangliosides. GM_1 stimulates neuronal sprouting and enhances the action of nerve growth factor (NGF) by directly and tightly associating with Trk, the high-affinity tyrosine kinase-type receptor for NGF. It is also the specific cell surface receptor for cholera toxin. Because gangliosides are very important in neuronal cells, autoantibodies against gangliosides or other glycosphingolipids can lead to many autoimmune neuropathies such as demyelinating polyneuropathy, Guillain-Barré syndrome, motor neuron disease[3] and sensorymotor neuropathy. IgM anti-GM_1 occurs frequently in the serum of patients with multifocal motor neuropathy.[4]

Selected References:

1. H. Yoshino, et al. "Fucosyl-GM1 in Human Sensory Nervous Tissue Is a Target Antigen in Patients with Autoimmune Neuropathies" *Journal of Neurochemistty*, Vol. 61 pp. 658, *1993*
2. S. Kusunoki, et al. "Neuropathy and IgM paraproteinemia: Differential binding of IgM M-proteins to peripheral nerve glycolipids" *Neurology*, Vol. 37 pp. 1795, *1987*
3. H. Yoshino, et al. "Isolated bovine spinal motoneurons have specific ganglioside antigens recognized by sera from patients with motor neuron disease and motor neuropathy." *Journal of Neurochemistry*, Vol. 59(5):1684, *1992*
4. A. Pestronk, MD and R. Choksi, MS "Multifocal motor neuropathy: Serum IgM anti-GM1 ganglioside antibodies in most patients detected using covalent linkage of GM1 to ELISA plates" *Neurology*, Vol. 49:1289, *1997*

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