

PRODUCT INFORMATION



Ganglioside G_{D2} Polyclonal Antibody Item No. 33235

Overview and Properties

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| Contents: | This vial contains 50 µl of polyclonal antibody to ganglioside G _{D2} . |
| Synonyms: | Disialoganglioside G _{D2} , Ganglioside G _{D2} , Disialo |
| Immunogen: | Purified ganglioside G _{D2} |
| Species Reactivity: | Species independent |
| Form: | Liquid |
| Storage: | -20°C (as supplied) |
| Stability: | ≥2 years |
| Host: | Rabbit |
| Isotype: | IgG/IgM |
| Applications: | ELISA and TLC immunoblotting; The optimal working concentration/dilution should be determined empirically. |

Description

Ganglioside G_{D2} (Item No. 25487) is a glycosphingolipid that contains two sialic acid residues linked to an inner galactose unit. It is produced by the transfer of N-acetylgalactosamine (GalNAc; Item No. 31728) from UDP-GalNAc to the precursor ganglioside G_{D3} (Item No. 17481) by β-1,4-N-acetylgalactosaminyltransferase 1 (β4GalNAcT1), also known as ganglioside G_{M2}/G_{D2} synthase, and can be galactosylated to ganglioside G_{D1b} (Item No. 19569) by β-1,3-galactosyltransferase 4 (β3GalT4), also known as ganglioside G_{M1}/G_{A1}/G_{D1} synthase.^{2,3} Ganglioside G_{D2} is frequently expressed on the plasma membrane of tumor cells of neuroectodermal origin, including neuroblastomas, as well as bone and soft tissue sarcomas, melanoma, and small cell lung cancer, and is absent or weakly expressed in non-cancerous tissues.^{1,4} It is induced by expression of the epithelial-to-mesenchymal transition (EMT) inducers Twist and Snail in oncogenic human mammary epithelial cells.⁵ Anti-ganglioside G_{D2} monoclonal antibodies reduce the viability of G_{D2}-positive EL-4 mouse lymphoma, IMR-32 human neuroblastoma, and mS human melanoma cells, inducing features of both apoptosis and necrosis.⁴ Ganglioside G_{D2} has been found in more than 90% of neuroblastoma tissue samples, and plasma levels of soluble ganglioside G_{D2} are associated with tumor progression in patients with neuroblastoma.⁶ Formulations containing chimeric anti-ganglioside G_{D2} monoclonal antibodies have been used in the treatment of neuroblastoma in children. Ganglioside G_{D2} Polyclonal Antibody can be used for ELISA and TLC immunoblotting applications.

References

1. Barker, E.L., Mueller, B.M., Handgretinger, R., *et al.* Effect of a chimeric anti-ganglioside G_{D2} antibody on cell-mediated lysis of human neuroblastoma cells. *Cancer Res.* **51(1)**, 144-149 (1991).
2. Piccolo, M.S.L., Cheung, N.K., and Cheung, I.Y. G_{D2} synthase: A new molecular marker for detecting neuroblastoma. *Cancer* **92(4)**, 924-931 (2001).
3. Miyazaki, H., Fukumoto, S., Okada, M., *et al.* Expression cloning of rat cDNA encoding UDP-galactose: G_{D2} beta1,3-galactosyltransferase that determines the expression of G_{D1b}/G_{M1}/G_{A1}. *J. Bio. Chem.* **272(40)**, 24794-24799 (1997).
4. Doronin, I.I., Vishnyakova, P.A., Kholodenko, I.V., *et al.* Ganglioside G_{D2} in reception and transduction of cell death signal in tumor cells. *BMC Cancer* **14**, 295 (2014).
5. Battula, V.L., Shi, Y., Evans, K.W., *et al.* Ganglioside G_{D2} identifies breast cancer stem cells and promotes tumorigenesis. *J. Clin. Invest.* **122(6)**, 2066-2078 (2012).
6. Balis, F.M., Busch, C.M., Desai, A.M., *et al.* The ganglioside GD2 as a circulating tumor biomarker for neuroblastoma. *Pediatr. Blood Cancer* **67(1)**, e28031 (2020).

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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