

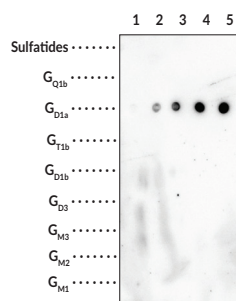
PRODUCT INFORMATION

Ganglioside G_{D1a} Monoclonal Antibody (Clone MOG35) Item No. 38295

Overview and Properties

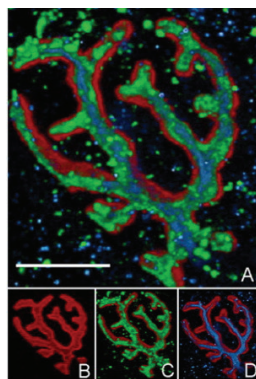
Contents:	This vial contains 100 µg of protein G-purified monoclonal antibody.
Synonyms:	Disialoganglioside G _{D1a} , Ganglioside B ₁ , Ganglioside G ₃
Immunogen:	Ganglioside G _{D1a} -KLH
Cross Reactivity:	(+) Ganglioside G _{D1a} ; (-) Ganglioside G _{D1b} , Ganglioside G _{D3} , Ganglioside G _{M1} , Ganglioside G _{M2} , Ganglioside G _{M3} , Ganglioside G _{Q1b} , Sulfatides
Species Reactivity:	Species Independent
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥3 years
Storage Buffer:	PBS, pH 7.2, with 50% glycerol and 0.02% sodium azide
Clone:	MOG35
Host:	Mouse
Isotype:	IgG2b
Applications:	Dot blot, ELISA, Immunofluorescence (IF), and Thin Layer Chromatography (TLC) Immunostaining; the recommended starting dilution for dot blot is 1:500-1:1,000, 1:1,000 for ELISA, 1:10-1:50 for IF, and 1:500 for TLC immunostaining. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images

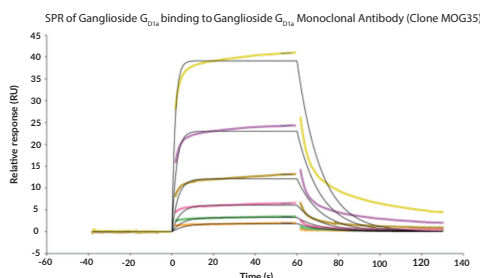


Lane 1: 10 ng
Lane 2: 25 ng
Lane 3: 50 ng
Lane 4: 100 ng
Lane 5: 150 ng

Dot blot against gangliosides using Ganglioside G_{D1a} Monoclonal Antibody (Clone MOG35).¹



Immunofluorescent localization of Ganglioside G_{D1a} Monoclonal Antibody (Clone MOG35) at GD3s-/- triangularis sterni neuromuscular junctions (NMJs). A merge of B, BTx (AChRs) C, MOG-35 (green), D, neurofilament (anti-NF) (blue).¹



Representative Image: Ganglioside G_{D1a} specifically binds Ganglioside G_{D1a} Monoclonal Antibody (Clone MOG35). Ganglioside G_{D1a} Monoclonal Antibody (Clone MOG35) was immobilized on a Series S Sensor Chip CM5 and SPR analysis was used to determine Ganglioside G_{D1a} (bovine) (Item No. 31591) binding affinity on a Biacore™ 8K, using multicycle kinetics with six concentrations of Ganglioside G_{D1a}.

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.

WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 08/16/2024

CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

PRODUCT INFORMATION



Description

Ganglioside G_{D1a} (Item Nos. 31591 | 15585 | 31707) is a sialic acid-containing glycosphingolipid that has been found in brain, erythrocytes, bone marrow, testis, spleen, and liver, as well as in serum lipoproteins.^{2,3} It is formed by the transfer of N-acetylneuraminic acid (Neu5Ac; Item No. 16091) to the precursor ganglioside G_{M1a} by CMP-N-acetylneuraminase-β-galactosamide-α-2,3-sialyltransferase 2 (ST3Gal-II).⁴ It functions as a toll-like receptor 2 (TLR2) co-receptor in isolated human monocytes, colocalizing with TLR2 and enhancing the binding of type IIb *E. coli* enterotoxin (LT-IIb-B₅) to TLR2.⁵ Ganglioside G_{D1a} also mediates polyomavirus entry into host cells.⁶ Ganglioside G_{D1a} is shed into the tumor microenvironment from the surface of tumor cells, where it influences tumor-host cell interactions to promote tumor cell proliferation, invasion, and metastasis, as well as increases VEGF-induced proliferation of human umbilical vein endothelial cells (HUVECs). A monoclonal antibody targeting ganglioside G_{D1a} and ganglioside G_{T1b} (Item Nos. 31712 | 15588 | 31592) inhibits axon regeneration in a mouse model of sciatic nerve crush-induced peripheral nervous system injury.⁷ Ganglioside G_{D1a} accumulates in the CNS of patients with galactosialidosis, a lysosomal storage disorder.⁸ Cayman's Ganglioside G_{D1a} Monoclonal Antibody (Clone MOG35) binds to Ganglioside G_{D1a} (bovine brain) (Item No. 15585) with *k_a*, *k_d*, and *K_D* values of 40,200 M⁻¹s⁻¹, 0.078 s⁻¹, and 2.01 μM, respectively, as determined by surface plasmon resonance (SPR). It can be used for dot blot, ELISA, immunofluorescence (IF), and TLC immunostaining applications.

References

1. Goodfellow, J.A., Bowes, T., Sheikh, K., *et al.* Overexpression of GD1a ganglioside sensitizes motor nerve terminals to anti-GD1a antibody-mediated injury in a model of acute motor axonal neuropathy. *J. Neurosci.* **25**(7), 1620-1628 (2005).
2. Iwamori, M., Shimomura, J., Tsuyuhara, S., *et al.* Gangliosides of various rat tissues: Distribution of ganglio-N-tetraose-containing gangliosides and tissue-characteristic composition of gangliosides. *J. Biochem.* **95**(3), 761-770 (1984).
3. Senn, H.J., Orth, M., Fitzke, E., *et al.* Gangliosides in normal human serum. Concentration, pattern and transport by lipoproteins. *Eur. J. Biochem.* **181**(3), 657-662 (1989).
4. Cavdarli, S., Groux-Degroote, S., and Delannoy, P. Gangliosides: The double-edge sword of neuro-ectodermal derived tumors. *Biomolecules* **9**(8), 311 (2019).
5. Liang, S., Wang, M., Tapping, R.I., *et al.* Ganglioside GD1a is an essential coreceptor for Toll-like receptor 2 signaling in response to the B subunit of type IIb enterotoxin. *J. Biol. Chem.* **282**(10), 7532-7542 (2007).
6. Gilbert, J. and Benjamin, T. Uptake pathway of polyomavirus via ganglioside GD1a. *J. Virol.* **78**(22), 12259-12267 (2004).
7. Lehmann, H.C., Lopez, P.H.H., Zhang, G., *et al.* Passive immunization with anti-ganglioside antibodies directly inhibits axon regeneration in an animal model. *J. Neurosci.* **27**(1), 27-34 (2007).
8. Walkley, S.U. Secondary accumulation of gangliosides in lysosomal storage disorders. *Semin. Cell Dev. Biol.* **15**(4), 433-444 (2004).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM