# PRODUCT INFORMATION

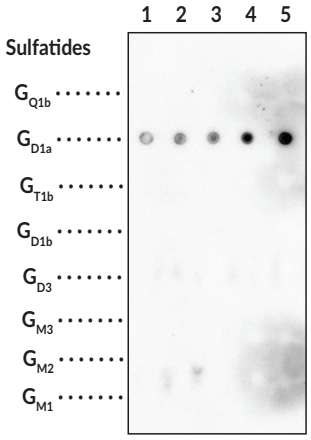
## Ganglioside $G_{D1a}$ Monoclonal Antibody (Clone TBG3)

*Item No. 38296*

### Overview and Properties

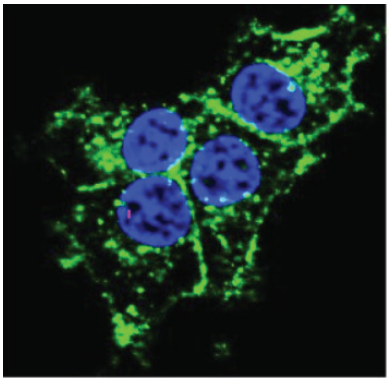
| | |
|---|---|
| **Contents:** | This vial contains 100 µg of protein A-purified monoclonal antibody. |
| **Synonyms:** | Disialoganglioside $G_{D1a}$, Ganglioside $B_1$, Ganglioside $G_3$ |
| **Immunogen:** | $G_{D1a}$ |
| **Cross Reactivity:** | (+) Ganglioside $G_{D1a}$; (-) Ganglioside $G_{D1b}$, 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:** | TBG3 |
| **Host:** | Mouse |
| **Isotype:** | IgG3 |
| **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:** 200 ng

Dot blot against gangliosides using Ganglioside $G_{D1a}$ Monoclonal Antibody (Clone TBG3).[1]



PC12 cells labeled with Ganglioside $G_{D1a}$ Monoclonal Antibody (Clone TBG3) were incubated at 37°C for 30 min.[1]

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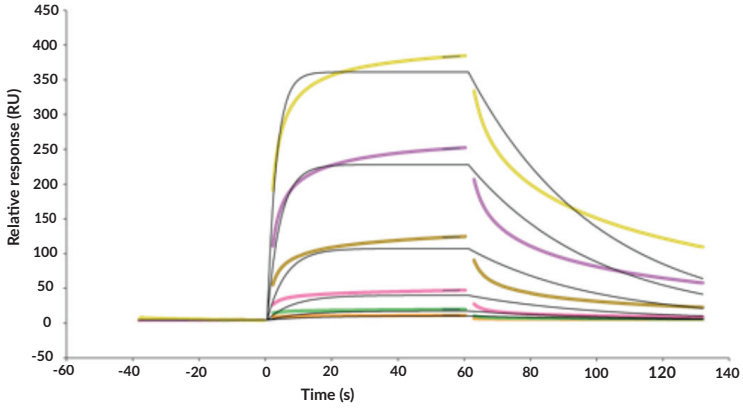


**Representative image: Ganglioside $GD_{1a}$ Specifically Binds Ganglioside $GD_{1a}$ Monoclonal Antibody (Clone TBG3).** Ganglioside $GD_{1a}$ Monoclonal Antibody (Clone TBG3) was immobilized on a Series S Sensor Chip CM5 and SPR analysis was used to determine Ganglioside $GD_{1a}$ (bovine) (ammonium salt) (Item No. 31591) binding affinity on a Biacore 8K, using multi cycle kinetics with six concentrations of Ganglioside $GD_{1a}$.

## 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-acetylneuraminate-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-$B_5$) 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 TBG3) binds to Ganglioside $G_{D1a}$ (bovine brain) (Item No. 15585) with $k_a$, $k_d$, and $K_D$ values of 26,300 $M^{-1}s^{-1}$, 0.0342 $s^{-1}$, and 1.36 µM, respectively, as determined by surface plasmon resonance (SPR). It can be used for dot blot, ELISA, immunofluorescence (IF), and TLC immunostaining applications.

## References


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