

PRODUCT INFORMATION

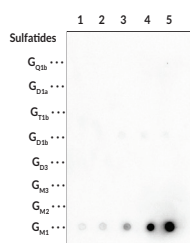


Ganglioside G_{M1} Monoclonal Antibody (Clone DG2) Item No. 38290

Overview and Properties

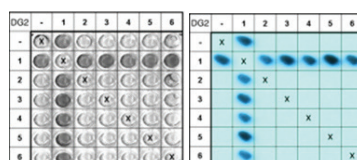
Contents:	This vial contains 100 µg of protein A-purified monoclonal antibody.
Synonyms:	G _{M1} , Monosialoganglioside G _{M1}
Immunogen:	Ganglioside G _{M1} liposomes
Cross Reactivity:	(+)G _{M1} , (Minimal) reactivity to G _{D1b} ; (-) Other gangliosides
Species Reactivity:	Species Independent
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥3 years
Storage Buffer:	PBS, pH 7.2, with 50% glycerol and 0.02% sodium azide
Clone:	DG2
Host:	Mouse
Isotype:	IgG3
Applications:	Dot blot, ELISA, Immunofluorescence (IF), and Thin Layer Chromatography (TLC); the recommended starting dilution is 1:500-1,000 for dot blot, 1:1,000-2,000 for ELISA, and 1:10 for IF. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



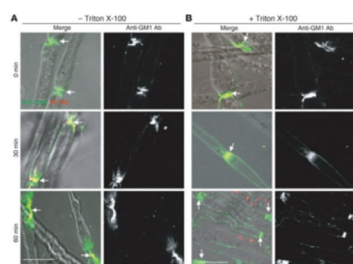
Lane 1: 10 ng
Lane 2: 25 ng
Lane 3: 50 ng
Lane 4: 100 ng
Lane 5: 150 ng

Dot blot against gangliosides using
Ganglioside G_{M1} Monoclonal Antibody
(Clone DG2).



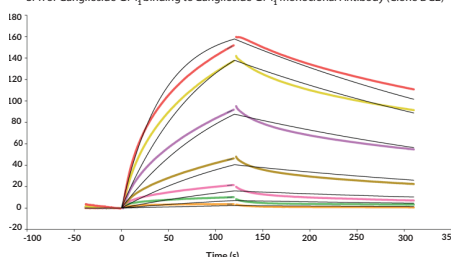
Lane 1: G_{M1}
Lane 2: G_{M2}
Lane 3: G_{M3}
Lane 4: G_{D1a}
Lane 5: G_{D1b}
Lane 6: G_{D3}

Reactivity of Ganglioside G_{M1} Monoclonal Antibody to
ganglioside complexes in solid phase.¹



Fluorescent microscopy analysis of Ganglioside G_{M1} at the Node of Ranvier. Teased sciatic nerve fibers from G_{D1b}^{-/-} mice were incubated with Ganglioside G_{M1} Monoclonal Antibody (Clone DG2) under non-permeabilized (A) and permeabilized (B) conditions for the indicated amounts of time. Then nerve fibers were stained with a mouse secondary antibody²

SPR of Ganglioside G_{M1} binding to Ganglioside G_{M1} Monoclonal Antibody (Clone DG2)



Representative Image: Ganglioside G_{M1} specifically binds Ganglioside G_{M1} Monoclonal Antibody (Clone DG2). Ganglioside G_{M1} Monoclonal Antibody (Clone DG2) was immobilized on a Series 5 Sensor Chip CM5 and SPR analysis was used to determine Ganglioside G_{M1} (porcine) (Item No. 19579) binding affinity on a Biacore™ 8K, using multicycle kinetics with six concentrations of Ganglioside G_{M1}.

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
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Description

Ganglioside G_{M1} is a monosialylated ganglioside and the prototypic ganglioside for those containing one sialic acid residue.^{3,4} It is found in a large variety of cells, including immune cells and neurons, and is enriched in lipid rafts in the cell membrane.⁵ It associates with growth factor receptors, including TrkA, TrkB, and the GDNF receptor complex containing Ret and GFR α , and is required for TrkA expression on the cell surface. Ganglioside G_{M1} interacts with other proteins to increase calcium influx, affecting various calcium-dependent processes, including inducing neuronal outgrowth during differentiation. Ganglioside G_{M1} acts as a receptor for cholera toxin, which binds to its oligosaccharide group, facilitating toxin cell entry into epithelial cells of the jejunum.^{6,7} Similarly, it is bound by the heat-labile enterotoxin from *E. coli* in the pathogenesis of traveler's diarrhea.⁸ Ganglioside G_{M1} sensitizes inactivated T cells to TNF- α -induced apoptosis and induces apoptosis of activated T cells even in the absence of TNF- α .⁹ Ganglioside G_{M1} is found at higher levels on T cells isolated from patients with renal cell carcinoma (RCC) compared with T cells from patients without cancer. Levels of ganglioside G_{M1} are decreased in the substantia nigra pars compacta in postmortem brain tissues from patients with Parkinson's disease.⁵ Ganglioside G_{M1} gangliosidosis, characterized by a deficiency in ganglioside G_{M1} - β -galactosidase, the enzyme that degrades ganglioside G_{M1} , leads to accumulation of the gangliosides G_{M1} and G_{A1} in neurons and can be fatal in infants.³ Cayman's Ganglioside G_{M1} Monoclonal Antibody (Clone DG2) binds to Ganglioside G_{M1} (porcine brain) (Item No. 19579) with k_a , k_d , and K_D values of $2,280 \text{ M}^{-1}\text{s}^{-1}$, 0.00353 s^{-1} , and $1.81 \text{ }\mu\text{M}$, 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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