

PRODUCT INFORMATION



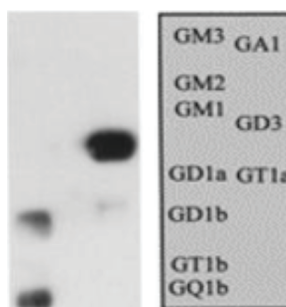
Ganglioside G_{Q1b} Monoclonal Antibody (Clone CGM3) - Purified

Item No. 42993

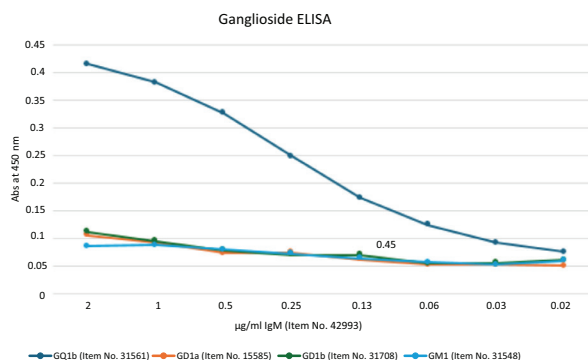
Overview and Properties

Contents:	This vial contains 100 µg of ammonium sulfate purified mouse IgM.
Synonym:	Tetrasialoganglioside G _{Q1b}
Immunogen:	<i>C. jejuni</i> OH4384/CFA
Cross Reactivity:	(+) <i>C. jejuni</i> OH4384/CFA (-) Other gangliosides
Species Reactivity:	Species Independent
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS, pH 7.2, with 50% glycerol and 0.02% sodium azide
Clone:	CGM3
Host:	Mouse
Isotype:	IgM
Applications:	ELISA, immunofluorescence (IF), and TLC immunostaining; the recommended starting dilution for ELISA is 1:500-1,000, 1:10-1:50 for IF, and 1:500 for TLC. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

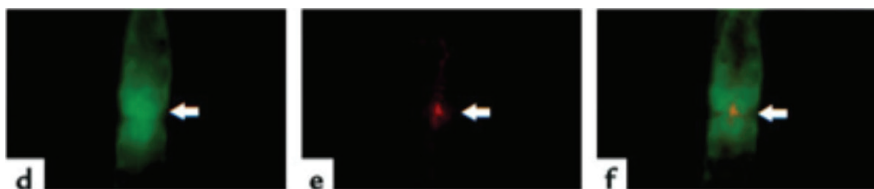
Images



CGM3 Schema
TLC immuno-overlay of CGMG



ELISA. Plates were coated with the indicated ganglioside and blocked with BSA followed by probing with the indicated amounts of G_{Q1b} Monoclonal Antibody (Clone CGM3) - Purified.



Immunofluorescence analysis of sciatic nerve node of Ranvier co-labeled with FITC-labeled cholera toxin B subunit (CTB) (d) and Ganglioside G_{Q1b} Monoclonal Antibody (Clone CGM3). CTB stains the paranodal myelin that lies on either side of the nodal gap (arrow). G_{Q1b} Monoclonal Antibody (Clone CGM3) gives a bright signal directly overlying the nodal axolemma, with a weaker ribbon of axonal staining on either side of the node (x790).

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.

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Description

Ganglioside G_{Q1b} is a sialic acid-containing glycosphingolipid that has been found in myelin of the oculomotor nerves and dorsal root ganglia, as well as neuromuscular spindle fibers.^{1,2} It is found on the plasma membrane, where it is anchored by the ceramide moiety with the sialylated oligosaccharide on the extracellular side.² In axonal myelin, it helps to stabilize the paranodal region in the node of Ranvier.¹ Ganglioside G_{Q1b} is similar in shape to lipo-oligosaccharides (LOS) on the membrane of certain pathogens, including the bacterium *C. jejuni*. Due to this similarity, autoantibodies against ganglioside G_{Q1b} can be formed during infection with *C. jejuni*. Ganglioside G_{Q1b} monoclonal antibody (CGM3) induces muscle fiber twitching then paralysis in *ex vivo* mouse phrenic nerve hemidiaphragm preparations from mice passively immunized with ganglioside G_{Q1b} monoclonal antibody (CGM3) but only when human serum is present to provide complement and not when applied alone.² Autoantibodies against ganglioside G_{Q1b} are found in the cerebrospinal fluid in a majority of patients during the acute phase of Miller-Fisher syndrome, a rare variant of Guillain-Barré syndrome characterized by eye movement abnormalities, impaired coordination, and tendon reflex loss.¹⁻³ Cayman's Ganglioside G_{Q1b} Monoclonal Antibody (Clone CGM3) - Purified can be used for ELISA, immunofluorescence (IF), and thin-layer chromatography (TLC) applications.

References

1. Noioso, C.M., Bevilacqua, L., Acerra, G.M., *et al.* Miller Fisher syndrome: An updated narrative review. *Front. Neurol.* **14**, 1250774 (2023).
2. Goodyear, C.S., O'Hanlon, G.M., Plomp, J.J., *et al.* Monoclonal antibodies raised against Guillain-Barré syndrome-associated *Campylobacter jejuni* lipopolysaccharides react with neuronal gangliosides and paralyze muscle-nerve preparations. *J. Clin. Invest.* **104**(6), 697-708 (1999).
3. Halstead, S.K., Humphreys, P.D., Goodfellow, J.A., *et al.* Complement inhibition abrogates nerve terminal injury in Miller Fisher syndrome. *Ann. Neurol.* **58**(2), 203-210 (2005).

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