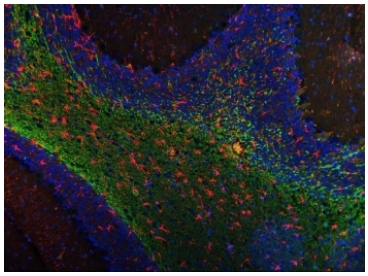
Siglec-4a Antibody / MAG / Myelin-associated glycoprotein [clone 2G11] (RQ6281)

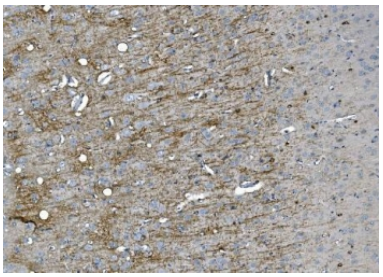
Catalog No.	Formulation	Size
RQ6281	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

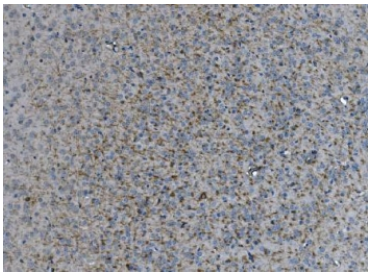
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG2a
Clone Name	2G11
Purity	Affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	P20916
Applications	Western Blot : 1-2ug/ml Immunohistochemistry (FFPE) : 2-5ug/ml Flow Cytometry : 1-3ug/million cells Immunofluorescence : 5ug/ml
Limitations	This Siglec-4a antibody is available for research use only.



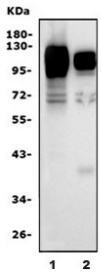
Immunofluorescent staining of FFPE rat cerebellum tissue with Siglec-4a antibody (green), GFAP antibody (red) and DAPI nuclear stain (blue). HIER: steam section in pH6 citrate buffer for 20 min.



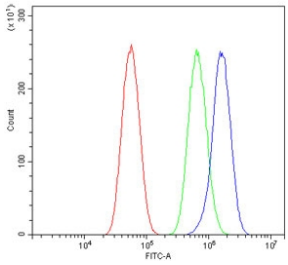
IHC staining of FFPE rat brain with Siglec-4a antibody. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



IHC staining of FFPE mouse brain with Siglec-4a antibody. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Western blot analysis of Siglec-4/MAG in rat and mouse brain using an anti-Siglec-4 antibody. Lane 1 (rat brain) and lane 2 (mouse brain) show a broad, intense band cluster between approximately 90-130 kDa, consistent with the heavily glycosylated MAG species commonly observed in CNS tissue. Both lanes also display a doublet at and just below ~72 kDa, representing lower-migrating MAG forms typically attributed to S-MAG and/or less-glycosylated variants. These apparent molecular weights exceed the predicted ~69 kDa size due to extensive glycosylation and glycoform heterogeneity of MAG.



Flow cytometry testing of human U-87 mG cells with Siglec-4a antibody at 1ug/million cells (blocked with goat sera); Red=cells alone, Green=isotype control, Blue= Siglec-4a antibody.

Description

Siglec-4a antibody (clone 2G11) detects Myelin-associated glycoprotein (MAG), a transmembrane sialic acid-binding immunoglobulin-like lectin that promotes axon-glia interactions and maintains myelin integrity in the central and peripheral nervous systems. The UniProt recommended name is Myelin-associated glycoprotein (MAG). Also known as Siglec-4a, this glycoprotein belongs to the immunoglobulin superfamily and is localized to the periaxonal membrane of oligodendrocytes and Schwann cells, where it supports long-term axonal stability.

Functionally, Siglec-4a antibody identifies a glycoprotein of approximately 626 amino acids that binds sialylated glycolipids and glycoproteins on neuronal surfaces. This interaction mediates glial-axon adhesion, signaling, and protection against axonal degeneration. MAG plays a dual role as both a structural adhesion molecule and a signaling receptor that regulates axonal growth and myelin maintenance. In the mature nervous system, MAG contributes to the inhibitory environment that limits axon regeneration following injury by interacting with neuronal receptors such as Nogo receptor 1 (NgR1) and gangliosides GD1a and GT1b.

The MAG gene is located on chromosome 19q13.12 and encodes two major isoforms (L-MAG and S-MAG) generated by alternative splicing. L-MAG is predominant in the central nervous system, whereas S-MAG is enriched in the peripheral nervous system. Both isoforms are localized to periaxonal membranes, where they mediate bidirectional signaling

between glial cells and axons. MAG expression begins early in myelination and persists throughout adulthood, helping preserve myelin architecture and axonal health.

Pathologically, alterations in MAG expression are associated with demyelinating and neurodegenerative disorders. Autoantibodies against MAG are a diagnostic feature of some chronic demyelinating neuropathies, such as anti-MAG neuropathy, which leads to progressive sensory loss and ataxia. Reduced MAG levels are also observed in multiple sclerosis and spinal cord injury, where demyelination and axonal degeneration occur concurrently. In experimental models, MAG-deficient mice display disrupted myelin-axon contact and progressive axonal degeneration, underscoring its role in long-term nerve maintenance.

Clone 2G11 is a mouse monoclonal antibody that recognizes human Myelin-associated glycoprotein (Siglec-4a). This antibody enables the detection of MAG expression in neural tissue and cell-based systems, providing a useful tool for studying myelin stability, axon-glia signaling, and neurodegenerative processes. Siglec-4a antibody (clone 2G11) is validated for use in relevant research applications to detect MAG expression and study its role in neural maintenance and regeneration. NSJ Bioreagents provides this monoclonal antibody optimized for neurobiology, demyelination, and glial research.

Application Notes

Optimal dilution of the Siglec-4a antibody should be determined by the researcher.

Immunogen

A human recombinant partial protein (amino acids E34-R605) was used as the immunogen for the Siglec-4a antibody.

Storage

After reconstitution, the Siglec-4a antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.