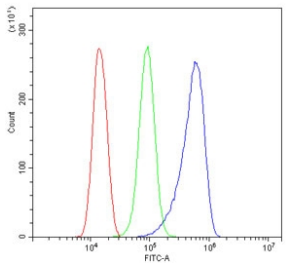
MLC1 Antibody / Astrocyte Membrane Protein and Brain Homeostasis Marker (RQ5896)

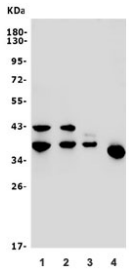
Catalog No.	Formulation	Size
RQ5896	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose and 0.025% sodium azide
UniProt	Q15049
Applications	Western Blot : 0.5-1ug/ml Flow Cytometry : 1-3ug/million cells Direct ELISA : 0.1-0.5ug/ml
Limitations	This MLC1 Antibody / Astrocyte Membrane Protein and Brain Homeostasis Marker is available for research use only.



MLC1 Antibody FACS. Flow cytometry testing of human ThP-1 cells with MLC1 antibody at 1ug/million cells (blocked with goat sera); Red=cells alone, Green=isotype control, Blue= CD59 antibody.



MLC1 Antibody Multi-Sample WB. Western blot analysis of rat brain, mouse brain, human SH-SY5Y, and rat C6 lysates using MLC1 antibody detecting MLC1. Lane 1: rat brain, Lane 2: mouse brain, Lane 3: SH-SY5Y, Lane 4: rat C6. Bands are observed at approximately 32-41 kDa, consistent with the predicted molecular weight of monomeric MLC1, with additional higher molecular weight bands near 70-72 kDa and above 100 kDa likely representing dimeric and oligomeric forms. This pattern aligns with MLC1 as a membrane-associated protein that can form multimeric complexes involved in astrocyte-mediated ion and water homeostasis.

Description

Megalencephalic leukoencephalopathy with subcortical cysts protein 1 (MLC1) is a membrane-associated protein predominantly expressed in astrocytes within the central nervous system. MLC1 Antibody is used to detect this protein, which plays a critical role in maintaining ion and water homeostasis in the brain and supporting white matter integrity.

MLC1 is localized primarily to astrocyte endfeet at the blood-brain barrier and in perivascular regions, where it is thought to participate in regulating ionic balance and fluid exchange between the vasculature and neural tissue. Although its exact molecular function is not fully defined, MLC1 is believed to form or regulate membrane complexes involved in ion transport and osmotic balance. This localization makes it an important marker for studying astrocyte function and neurovascular unit organization.

Mutations in the MLC1 gene are associated with megalencephalic leukoencephalopathy with subcortical cysts, a rare neurological disorder characterized by brain swelling, white matter abnormalities, and cyst formation. These findings highlight the importance of MLC1 in maintaining normal brain structure and fluid regulation. Disruption of MLC1 function can lead to impaired astrocyte-mediated homeostasis and altered extracellular environment within the central nervous system.

In addition to its role in inherited neurological disease, MLC1 has been studied in broader contexts of brain injury, edema, and neuroinflammation. Changes in MLC1 expression or localization may reflect altered astrocyte responses to pathological conditions, making it relevant for studies of brain damage and repair mechanisms. Its association with astrocyte membranes and perivascular regions supports its use as a marker for glial cell biology and neurovascular interactions.

MLC1 is typically detected in the plasma membrane and cytoplasmic compartments of astrocytes, consistent with its proposed involvement in membrane-associated complexes. The protein is expressed at high levels in brain tissue, particularly in regions rich in white matter. Detection of MLC1 expression provides insight into astrocyte function, brain homeostasis, and disease-associated changes in neural tissue organization.

This antibody is part of a broader antibody panel offered by NSJ Bioreagents.

Application Notes

Optimal dilution of the MLC1 Antibody / Astrocyte Membrane Protein and Brain Homeostasis Marker should be determined by the researcher.

Immunogen

Recombinant human protein (amino acids M1-Q377) was used as the immunogen for the MLC1 antibody.

Storage

After reconstitution, the MLC1 Antibody / Astrocyte Membrane Protein and Brain Homeostasis Marker can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

MLC1 antibody, Megalencephalic leukoencephalopathy protein 1 antibody, Megalencephalic leukoencephalopathy with subcortical cysts protein 1 antibody, Brain ion homeostasis protein antibody, MLC protein antibody