Human NCAM-1/CD56 Antibody

Monoclonal Mouse IgG_1 Clone # 1006411

Catalog Number: MAB24084

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human NCAM-1/CD56 in direct ELISAs.
Source	Monoclonal Mouse IgG_1 Clone # 1006411
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human NCAM-1/CD56 Leu20-Pro603 and Glu636-Asn741 Accession # NP_001070150
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 μm filtered solution in PBS.

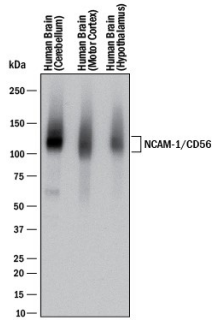
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	0.5 µg/mL	See Below
Flow Cytometry	0.25 µg/10^6 cells	See Below
Simple Western	20 µg/mL	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

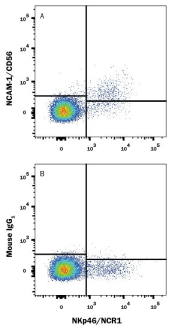
DATA

Western Blot



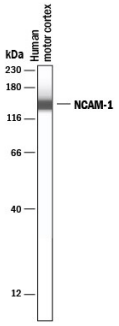
Detection of Human NCAM-1/CD56 by Western Blot. Western blot shows lysates of human brain (cerebellum) tissue, human brain (motor cortex) tissue, and human brain (hypothalamus) tissue. PVDF membrane was probed with 0.5 µg/mL of Mouse Anti-Human NCAM-1/CD56 Monoclonal Antibody (Catalog # MAB24084) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). A specific band was detected for NCAM-1/CD56 at approximately 120 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Flow Cytometry



Detection of NCAM-1/CD56 in Human Peripheral Blood by Flow Cytometry. Human peripheral blood was stained with either (A) Mouse Anti-Human NCAM-1/CD56 Monoclonal Antibody (Catalog # MAB24084) or (B) Mouse IgG1 Isotype Control (Catalog # MAB002) followed by anti-Mouse IgG APC-conjugated secondary antibody (Catalog # F0101B) and Mouse Anti-Human NKp46 PE-conjugated Monoclonal Antibody (Catalog # FAB1850P). View our protocol for Staining Membrane-associated Proteins.

Simple Western



Detection of Human NCAM-1/CD56 by Simple Western™. Simple Western lane view shows lysates of human motor cortex tissue, loaded at 0.2 mg/mL. A specific band was detected for NCAM-1/CD56 at approximately 150 kDa (as indicated) using 20 µg/mL of Mouse Anti-Human NCAM-1/CD56 Monoclonal Antibody (Catalog # MAB24084) . This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

Neural cell adhesion molecule 1 (NCAM-1) is a multifunctional member of the Ig superfamily. It belongs to a family of membrane-bound glycoproteins that are involved in Ca^{++} independent cell matrix and homophilic or heterophilic cell-cell interactions. NCAM-1 specifically binds to heparan sulfate proteoglycans (1), the extracellular matrix protein agrin (2), and several chondroitin sulfate proteoglycans that include neurocan and phosphocan (3). There are three main forms of human NCAM-1 that arise by alternate splicing. These are designated NCAM-120/NCAM-1 (761 amino acids [aa]), NCAM-140 (848 aa), and NCAM-180 (1120 aa). NCAM-120 is GPI-linked, while NCAM-140 and NCAM-180 are type I transmembrane glycoproteins (4 - 6). Additional alternate splicing adds considerable diversity to all three forms, and extracellular proteolytic processing is possible for NCAM-180 (7 - 8). NCAM-1 is synthesized as a 761 aa preproprecursor that contains a 19 aa signal sequence, a 722 aa GPI-linked mature region, and a 20 aa C-terminal prosegment (4). The molecule contains five C-2 type Ig-like domains and two fibronectin type-III domains. Human to mouse, NCAM-1 is 93% aa identical. NCAM-1 appears to be highly sialylated. The polysialyation of NCAM-1 reduces its adhesive property and increases its neurite outgrowth promoting features (9). NCAM-1 in the adult brain shows a decline of sialylation relative to earlier developmental periods. In regions that retain a high degree of neuronal plasticity, however, the adult brain continues to express polysialylation-NCAM-1, suggesting sialylation of NCAM-1 is involved in regenerative processes and synaptic plasticity (10 - 13).

References:

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