Human/Primate NCAM-1/CD56 Antibody

Monoclonal Mouse IgG_{2B} Clone # 301040

Catalog Number: MAB2408

DESCRIPTION

Species Reactivity	Human/Primate
Specificity	Detects human NCAM-1/CD56 in ELISAs and Western blots. In direct ELISAs and Western blots, no cross-reactivity with recombinant human (rh) ALCAM, rhBCAM, rhEPCAM, rhMCAM, rhNCAM-1-L1, recombinant mouse (rm) MAdCAM-1, rmNCAM-1-L1, or rmOCAM is observed.
Source	Monoclonal Mouse IgG_{2B} Clone # 301040
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human NCAM−1/CD56
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 as a 0.2 µm filtered solution in PBS.

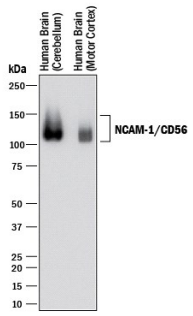
APPLICATIONS

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	1 µg/mL	See Below
Flow Cytometry	0.25 µg/10^6 cells	Human peripheral blood mononuclear cells
Human/Primate NCAM-1/CD56 Sandwich Immunoassay		**Reagent**
ELISA Capture	2-8 µg/mL	Human/Primate NCAM−1/CD56 Antibody (Catalog # MAB2408)
ELISA Detection	0.1-0.4 µg/mL	Human/Primate NCAM−1/CD56 Biotinylated Antibody (Catalog # BAF2408)
Standard		Recombinant Human NCAM−1/CD56 120 isoform (Catalog # 2408-NC)
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 and human brain (motor cortex) tissue. PVDF membrane was probed with 1 µg/mL of Mouse Anti-Human/Primate NCAM-1/CD56 Monoclonal Antibody (Catalog # MAB2408) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). A specific band was detected for NCAM-1/CD56 at approximately 100-150 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

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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