

DESCRIPTION

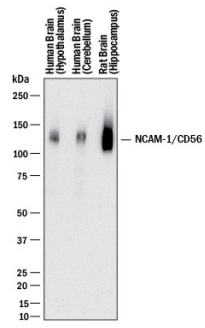
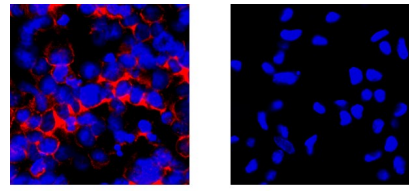
Species Reactivity	Human/Rat
Specificity	Detects human NCAM-1/CD56 in direct ELISAs. Detects human and rat NCAM-1/CD56 in Western blots.
Source	Recombinant Monoclonal Rabbit IgG Clone # 2524F
Purification	Protein A or G purified from cell culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived 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	1 µg/mL	See Below
Immunocytochemistry	3-25 µg/mL	See Below

DATA

<p>Western Blot</p>  <p>Detection of Human and Rat NCAM-1/CD56 by Western Blot. Western blot shows lysates of human brain (hypothalamus) tissue, human brain (cerebellum) tissue, and rat brain (hippocampus) tissue. PVDF membrane was probed with 1 µg/mL of Rabbit Anti-Human/Rat NCAM-1/CD56 Monoclonal Antibody (Catalog # MAB24085) followed by HRP-conjugated Anti-Rabbit IgG Secondary Antibody (Catalog # HAF008). A specific band was detected for NCAM-1/CD56 at approximately 140 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.</p>	<p>Immunocytochemistry</p>  <p>NCAM-1/CD56 in NK-92 human natural killer lymphoma cell line. NCAM-1/CD56 was detected in immersion fixed NK-92 human natural killer lymphoma cell line (left panel; positive staining) and A549 human lung carcinoma cell line (right panel; negative staining) using Rabbit Anti-Human NCAM-1/CD56 Monoclonal Antibody (Catalog # MAB24085) at 3 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Rabbit IgG Secondary Antibody (red; Catalog # NL004) and counterstained with DAPI (blue). Specific staining was localized to cell surface. View our protocol for Fluorescent ICC Staining of Non-adherent Cells.</p>
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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. <ul style="list-style-type: none"> • 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.

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 polysialylation 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:

1. Burg, M.A. *et al.* (1995) *J. Neurosci. Res.* **41**:49.
2. Storms, S.D. and U. Rutishauser (1998) *J Biol. Chem.* **273**:27124.
3. Margolis, R.K. *et al.* (1996) *Perspect. Dev. Neurobiol.* **3**:273.
4. Dickson, G. *et al.* (1987) *Cell* **50**:1119.
5. Lanier, L.L. *et al.* (1991) *J. Immunol.* **146**:4421.
6. Hemperly, J.J. *et al.* (1990) *J. Mol. Neurosci.* **2**:71.
7. Rutishauser, U. and C. Goridis (1986) *Trends Genet.* **2**:72.
8. Vawter, M.P. *et al.* (2001) *Exp. Neurol.* **172**:29.
9. Rutishauser, U. (1990) *Adv. Exp. Med. Biol.* **265**:179.
10. Becker, C.G. *et al.* (1996) *J. Neurosci. Res.* **45**:143.
11. Doherty, P. *et al.* (1995) *J. Neurobiol.* **26**:437.
12. Eckardt, M. *et al.* (2000) *J. Neurosci.* **20**:5234.
13. Muller, D. *et al.* (1996) *Neuron* **17**:413.