

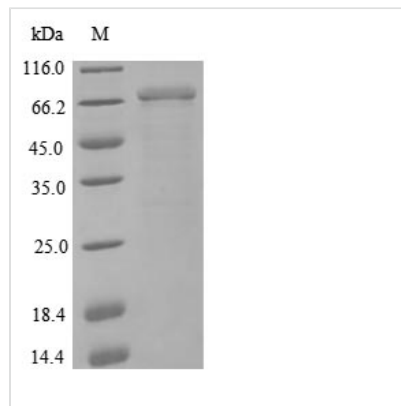


Recombinant Human Neural cell adhesion molecule 1 (NCAM1), partial

Product Code	CSB-EP015511HU1
Relevance	This protein is a cell adhesion molecule involved in neuron-neuron adhesion, neurite fasciculation, outgrowth of neurites, etc. (Microbial infection) Acts as a receptor for rabies virus.
Abbreviation	Recombinant Human NCAM1 protein, partial
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	P13591
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	ISVGESKFFLCQVAGDAKDKDISWFSPNGEKLTPNQQRISVWVNDSSSTLTIIY NANIDDAIGYKCVVTGEDGSESEATVNVKIFQKLMFKNAPTPQEFREGEDAVIV CDVSSLPPTIIWKHKGRDVILKKDVRFIVLSNNYLQIRGIKKTDEGTYRCEGRIL ARGEINFKDIQVIVNPPTIQRQNIVNATANLGQSVTLVCD AEGFPPEPTMSWT KDGEQIEQEEDDEKYIFSDDSSQLTIKKVDKNDEAEYICIAENKAGEQDATIHLK VFAKPKITYVENQTAMELEEQVTLTCEASGDPIPSITWRTSTRNISSEKTLTG HVVVRSHARVSSLTLKSIQYTDAGEYICTASNTIGQDSQSMYLEVQYAPKLQG PVAVYTWEGNQVNITCEVFAYPSATISWFRDQQLPSSNYSNIKIYNTPSASYL EVTPDSENDGFGNYNCTAVNRIGQESLEFILVQADTPSSPSIDQVEPYSSAQV QFDEPEATGGVPILKYKAEWRAVGEEVWHSKWYDAKEASMEGIVTIVGLKPE TTYAVRLAALNGKGLGEISAASEFKTQPVQGEPSAPKLEGQMGEDGNSIKVNL IKQDDGGSPIRHVLRVYRALSSEWKPEIRLPSGSDHVMLKSLDWNAEYEVYV AE
Research Area	Neuroscience
Source	E.coli
Target Names	NCAM1
Protein Names	CD_antigen: CD56 NCAM
Expression Region	31-677aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-tagged
Mol. Weight	75.9 kDa
Protein Length	Partial of isform 2



Image



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

The gene fragment coding for the 31-677aa of the human NCAM1 protein is co-expressed with the N-terminal 6xHis tag gene in E.coli cells. An expression vector carries the target gene and is transfected into E.coli cells for protein expression. After cell lysis, the NCAM1 protein is purified using Ni-NTA affinity chromatography, exploiting the 6xHis tag for selective purification. The purified recombinant human NCAM1 protein is eluted with an imidazole gradient and analyzed using SDS-PAGE, showing a purity exceeding 90%.

The human NCAM1 is a significant member of the immunoglobulin superfamily, primarily recognized for its role in neural development and cellular interactions. NCAM1 is a glycoprotein that facilitates cell-cell and cell-matrix adhesion, which is crucial during various developmental processes, including neuronal migration, synaptogenesis, and neurite outgrowth [1][2]. This molecule is particularly important in the central nervous system, where it contributes to the structural integrity and functionality of neural tissues.

NCAM1 is involved in multiple biological processes, including cellular signaling, migration, proliferation, and differentiation. It acts as a signaling receptor that influences various cellular behaviors such as apoptosis and synaptic plasticity, which are vital for maintaining neuronal health and function [2][3]. The expression of NCAM1 has been linked to several human diseases, particularly in the context of tumors, where it is found to be upregulated in various malignancies, including nervous system tumors and lymphomas [2][4]. Its role in cancer is multifaceted, as NCAM1 not only promotes cell adhesion but also influences tumor cell migration and invasion, thereby affecting cancer progression and metastasis [3][5].

Moreover, NCAM1 is implicated in neurodevelopmental disorders and conditions such as schizophrenia, where its expression levels have been associated with disease severity and neuronal connectivity [6]. Genetic variations affecting NCAM1 have been identified as potential risk factors for congenital heart diseases, indicating its broader significance beyond the nervous system [7]. Additionally, NCAM1 has been shown to interact with polysialic acid, a modification that enhances its adhesive properties and is crucial for neuronal plasticity during development [8].

References:



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- [8] M. Langhauser, J. Ustinova, E. Rivera-Milla, D. Ivannikov, C. Seidl, C. Slomka, et al. Ncam1a and ncam1b: two carriers of polysialic acid with different functions in the developing zebrafish nervous system, *Glycobiology*, vol. 22, no. 2, p. 196-209, 2011. <https://doi.org/10.1093/glycob/cwr129>

Reconstitution

We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL. We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.

Shelf Life

The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.