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Recombinant Mouse NCAM-1/CD56 Protein

Catalog No.: RP01943 Recombinant

Sequence Information

Species	Gene ID	Swiss Prot
Mouse	17967	P13595

Tags
C-Avi&His

Synonyms
Ncam1; Ncam;Neural cell adhesion molecule 1; N-CAM-1; NCAM-1; CD56

Product Information

Source	Purification
HEK293 cells	> 95% by SDS-PAGE.

Calculated MW	Observed MW
79.31 kDa	100-130

Endotoxin
< 0.01 EU/μg of the protein by LAL method.

Formulation
Lyophilized from a 0.22 μm filtered solution of PBS, pH 7.4.

Reconstitution
Centrifμge the vial before opening. Reconstitute to a concentration of 0.1-0.5 mg/mL in sterile distilled water. Avoid vortex or vigorously pipetting the protein. For long term storage, it is recommended to add a carrier protein or stablizer (e.g. 0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose), and aliquot the reconstituted protein solution to minimize free-thaw cycles.

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Background

Neural cell adhesion molecule 1 (NCAM-1; also CD56) is a membrane-bound glycoprotein that plays an important role in nervous system development and function. Mature mouse NCAM-1 consists of a 692 amino acid (aa) extracellular domain (ECD) with five tandem Ig-like domains and two fibronectin type III domains, an 18 aa transmembrane segment, and a 386 aa cytoplasmic domain . Three major splice variants of NCAM-1 are expressed: the 180 kDa full length NCAM-180 isoform, the 140 kDa NCAM-140 isoform which lacks most of the cytoplasmic domain, and the 120 kDa GPI-anchored NCAM-120 isoform that includes the ECD only. Splicing is tissue specific and developmentally regulated . Within the ECD, mouse NCAM-1 shares 94% and 95% aa sequence identity with human and rat NCAM-1, respectively. It is expressed on neurons and glial cells, skeletal muscle, and immune NK cells . NCAM-1 is extensively modified with polysialic acid (PSA) during development, but this addition is decreased in adult tissues . Polysialylation of NCAM-1 is retained in the adult hippocampus where it is important for synaptic plasticity and memory formation . The PSA moiety also participates in the binding of NCAM-1 to heparan sulfate proteoglycans and NCAM-1 mediated migration of olfactory neurons . Proteolytic shedding of NCAM-1 liberates a soluble ECD fragment that can inhibit cortical neurite branching and growth . The NCAM-140 isoform is preferentially expressed on NK cells that robustly secrete cytokines upon activation. Selective up-regulation of the NCAM-140 isoform in a variety of tumors initiates epithelial-mesenchymal transition (EMT) and promotes tumor cell invasion . Finally, NCAM-1 is known to interact with a number of transmembrane and extracellular molecules. NK cell NCAM-1 binds to T cell FGF R1, co-stimulating IL-2 production by T cells. NCAM-1 also forms a noncovalent membrane complex with GFR alpha 1, 2 and 4, generating a receptor for GDNF, NTN and PSP, respectively . And NCAM-1 is reported to form homophilic trans-interactions, and to interact with L1 CAM in cis, and with HSPGs (agrin and collagen XVIII) in trans. In general, these interactions are involved in cell adhesion, migration, and/or process extension .

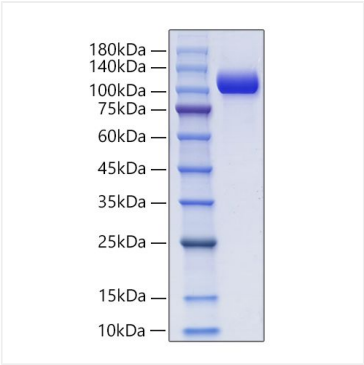
Basic Information

Description
Recombinant Mouse NCAM-1/CD56 Protein is produced by HEK293 cells expression system. The target protein is expressed with sequence (Leu20-Thr711□of Mouse NCAM-1/CD56(Accession #P13595) fused with a Avi&His tag at the C-terminus.

Bio-Activity

Storage
Store at -20℃. Store the lyophilized protein at -20℃ to -80℃ up to 1 year from the date of receipt.
After reconstitution, the protein solution is stable at -20℃ for 3 months, at 2-8℃ for up to 1 week.
Avoid repeated freeze/thaw cycles.

Validation Data



Recombinant Mouse NCAM-1/CD56 Protein was determined by SDS-PAGE with Coomassie Blue, showing a band at 50-60 kDa.