

PRODUCT INFORMATION



NCAM1/CD56 (human, recombinant)

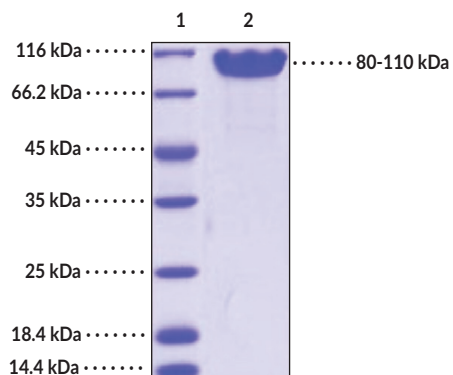
Item No. 38056

Overview and Properties

Synonyms: Cluster of Differentiation 56, Neural Cell Adhesion Molecule 1
Source: Recombinant human C-terminal His-tagged NCAM1 expressed in HEK293 cells
Amino Acids: 20-603
Uniprot No.: P13591
Molecular Weight: 66.1 kDa
Storage: -80°C (as supplied)
Stability: ≥1 year
Purity: ≥95% estimated by SDS-PAGE
Supplied in: Lyophilized from sterile PBS, pH 7.4
Endotoxin Testing: < 1.0 EU/μg, determined by the LAL endotoxin assay

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Markers

Lane 2: NCAM1/CD56

SDS-PAGE Analysis of NCAM1/CD56. This protein has an apparent molecular weight of 80-110 kDa by SDS-PAGE under reducing conditions due to glycosylation.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 03/27/2023

CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM

PRODUCT INFORMATION



Description

CD56, also known as neural cell adhesion molecule 1 (NCAM1), is a cell surface glycoprotein and member of the immunoglobulin superfamily that is involved in cellular adhesion and neural development.¹⁻³ Alternative splicing of the NCAM1 pre-mRNA produces several isoforms, including two transmembrane isoforms of 180 and 140 kDa, NCAM-180 and NCAM-140, respectively, that differ in size of the cytoplasmic domain, and a 120 kDa isoform, NCAM-120, that lacks the cytoplasmic domain and is linked to the plasma membrane by a glycosylphosphatidylinositol (GPI) anchor.¹ CD56 is composed of an extracellular N-terminal domain containing five immunoglobulin-like (Ig-like) domains and two fibronectin type III domains that mediate homophilic and heterophilic interactions, a transmembrane domain, and an intracellular C-terminal signaling domain.^{2,4} It is used as a marker for neural and natural killer (NK) cells, but is also expressed by other immune cells, including monocytes, T cells, and dendritic cells (DCs), as well as tumor cells, in an isoform-dependent manner.^{1,2,4} CD56 is increased on NK cells by stimulation with IL-15 or IL-2 and correlates with upregulation of the NK cell activating receptors NKG2D, NKp30, and NKp46 and NK cell-mediated cytotoxicity.^{1,4} Homophilic CD56 interactions induce neurite outgrowth of cerebellar neurons and promote NK cell-mediated tumor cell lysis *in vitro*.¹⁻⁴ The frequency of peripheral blood CD56^{bright} NK cells is increased in patients with melanoma and associated with reduced overall survival.⁵ Cayman's NCAM1/CD56 (human, recombinant) protein consists of 591 amino acids, has a calculated molecular weight of 66.1 kDa, and a predicted N-terminus of Leu20 after signal peptide cleavage. By SDS-PAGE, under reducing conditions, the apparent molecular mass of the protein is approximately 80-110 kDa due to glycosylation.

References

1. Van Acker, H.H., Capsomidis, A., Smits, E.L., *et al.* CD56 in the immune system: More than a marker for cytotoxicity? *Front. Immunol.* **8**, 892 (2017).
2. Kitlevsen, D.K., Povlsen, G.K., Berezin, V., *et al.* NCAM-induced intracellular signaling revisited. *J. Neurosci. Res.* **86**(4), 727-743 (2008).
3. Williams, E.J., Furness, J., Walsh, F.S., *et al.* Activation of the FGF receptor underlies neurite outgrowth stimulated by L1, N-CAM, and N-cadherin. *Neuron* **13**(3), 583-594 (1994).
4. Van Acker, H.H., Van Acker, Z.P., Versteven, M., *et al.* CD56 homodimerization and participation in anti-tumor immune effector cell functioning: A role for interleukin-15. *Cancers (Basel)* **11**(7), 1029 (2019).
5. de Jonge, K., Ebering, A., Nassiri, S., *et al.* Circulating CD56 bright NK cells inversely correlate with survival of melanoma patients. *Sci. Rep.* **9**(1), 4487 (2019).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM