

CD166/ALCAM Protein, Human, Recombinant (His)

General Information

Synonyms:	activated leukocyte cell adhesion molecule;CD166;MEMD
Protein Construction:	A DNA sequence encoding the extracellular domain (Met1-Ala526) of human ALCAM (NP_001618.2) was expressed with the C-terminal polyhistidine tag. Predicted N terminal: Trp 28
Species:	Human
Expression Host:	HEK293 Cells
Accession:	Q13740-1
Molecular Weight:	57.4 kDa (predicted); 78.3 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Immobilized human ALCAM-His at 10 µg/ml (100 µl/well) can bind mouse CD6-Fc , The EC50 of mouse CD6-Fc is 0.1-0.22 µg/ml.
Purity:	≥ 98 % as determined by SDS-PAGE. ≥ 95 % as determined by SEC-HPLC.
Endotoxin:	< 1.0 EU/µg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 µm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:
Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Activated leukocyte cell adhesion molecule (ALCAM)/Cluster of differentiation (CD166) is a type I transmembrane cell adhesion molecule belonging to the Ig superfamily and a ligand for CD6 that is expressed on T lymphocytes. The extracellular domain of ALCAM contains five Ig-like domains (three Ig-like C2-type domains and two Ig-like V-type domains), of which the amino-terminal V1 domain is essential for ligand binding and ALCAM-mediated cell

aggregation. ALCAM mediates both heterophilic (ALCAM-CD6) and homophilic (ALCAM-ALCAM) cell-cell interactions. ALCAM/CD6 interaction plays a role in T cell development and T cell regulation, as well as in the binding of T- and B-cells to activated leukocytes. Recently, homophilic (ALCAM-ALCAM) adhesion was shown to play important roles in tight cell-to-cell interaction and regulation of stem cell differentiation. While expressed in a wide variety of tissues, ALCAM is usually restricted to subsets of cells involved in dynamic growth and/or migration, including neural development, branching organ development, hematopoiesis, immune response and tumor progression. And CD166 is regarded as a potential novel breast cancer indicator and therapeutic target.

Reference

Swart GW. (2002) Activated leukocyte cell adhesion molecule (CD166/ALCAM): developmental and mechanistic aspects of cell clustering and cell migration. *Eur J Cell Biol.* 81(6): 313-21.

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Kahlert C, et al. (2009) Increased expression of ALCAM/CD166 in pancreatic cancer is an independent prognostic marker for poor survival and early tumour relapse. *Br J Cancer.* 101(3): 457-64.

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