

CD166/ALCAM Protein, Rat, Recombinant (hFc)

General Information

Synonyms:	activated leukocyte cell adhesion molecule
Protein Construction:	A DNA sequence encoding the rat ALCAM (O35112) (Met1-Lys527) was expressed with the Fc region of human IgG1 at the C-terminus. Predicted N terminal: Trp 28
Species:	Rat
Expression Host:	HEK293 Cells
Accession:	O35112
Molecular Weight:	83.1 kDa (predicted); 94 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Immobilized rat CD6-His at 10 µg/ml (100 µl/well) can bind rat ALCAM-Fc3, The EC50 of rat ALCAM-Fc3 is 19.5-45.5 ng/ml.
Purity:	> 95 % as determined by SDS-PAGE
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:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

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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Jezierska A, et al. (2006) ALCAM/CD166 protects breast cancer cells against apoptosis and autophagy. *Med Sci Monit.* 12(8): BR263-73.

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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