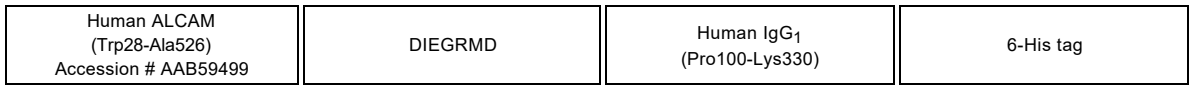
Recombinant Human ALCAM/CD166 Fc Chimera

Catalog Number: 656-AL

DESCRIPTION

Source

Mouse myeloma cell line, NS0-derived human ALCAM/CD166 protein



N-terminal Sequence Analysis	Trp28
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	83.5 kDa (monomer)

SPECIFICATIONS

SDS-PAGE	99-115 kDa, reducing conditions
Activity	Measured by its ability to block adhesion of HuT 78 human cutaneous T cell lymphoma cells to immobilized Recombinant Human CD6 Fc Chimera (Catalog # 627-CD). The ED_{50} for this effect is 0.3-1.5 µg/mL. **Optimal dilutions should be determined by each laboratory for each application.**
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

ALCAM (activated leukocyte cell adhesion molecule), designated CD166 and also called MEMD and SC-1/DM-GRASP/BEN in the chicken, is a 100-110 kDa type I transmembrane glycoprotein and a member of the Ig CAM family within the immunoglobulin superfamily (1). ALCAM is expressed on thymic epithelium, microvascular endothelium, activated lymphocytes and monocytes, and monocyte-derived dendritic cells (1, 2). Human ALCAM cDNA encodes 583 amino acid (aa), including signal peptide (27 aa), extracellular domain (ECD, 500 aa) with two V-type and three C2-type Ig-like domains, transmembrane (22 aa) and cytoplasmic (34 aa) domains (1). Human ALCAM ECD shares 93%, 95% and 96% aa sequence identity with mouse/rat, bovine and porcine/equine ALCAM, respectively. A 570 aa isoform lacks aa 503-515, while a 555 aa form lacks most of the cytoplasmic domain. A secreted isoform in endothelial cells that is truncated at aa 133 (sALCAM) antagonizes full-length ALCAM (3, 4). ALCAM mediates low-affinity adhesion with itself or the cysteine-rich scavenger receptor CD6 to regulate T cell development, immunological synapses (IS), and cell migration through endothelial junctions (1-11). ALCAM on thymic epithelia mediates adhesion to CD6 on $CD4^+CD8^+$ T cells (6). Adhesion of ALCAM-expressing antigen presenting cells and CD6-expressing T cells stabilizes the early IS, while later it enhances CD3 effects on T cell proliferation, CD25 expression, and Th1 commitment (2, 7, 8). High ALCAM expression at the blood-brain barrier in active multiple sclerosis, and its mouse model (EAE), promotes leukocyte migration to the brain (8, 9). High ALCAM expression on melanoma cell lines appears to be pro-metastatic, but anti-metastatic activity has been reported in breast cancer (3, 10, 11). ALCAM may influence expression or adhesion of the neuronal adhesion molecule NCAM-L1, both in the developing retina and invasive melanoma (3, 12).

References:

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