

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human ALCAM/CD166 in direct ELISAs and Western blots. In Western blots, no cross-reactivity with recombinant mouse (rm) ALCAM, recombinant human (rh) BCAM, rhTROP-2, rhEpCAM, rhMCAM, rhNCAM1, rmMadCAM, or rmOCAM is observed.
Source	Monoclonal Mouse IgG ₁ Clone # 105902
Purification	Protein A or G purified from ascites
Immunogen	Mouse myeloma cell line NS0-derived recombinant human ALCAM/CD166 Trp28-Ala526 Accession # AAB59499
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.

	Recommended Concentration	Sample
Western Blot	1 µg/mL	Recombinant Human ALCAM/CD166 Fc Chimera (Catalog # 656-AL) under non-reducing conditions only
Flow Cytometry	2.5 µg/10 ⁶ cells	Human whole blood lymphocytes

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 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:

1. Bowen, M.A. *et al.* (1995) *J. Exp. Med.* **181**:2213.
2. Zimmerman, A.W. *et al.* (2006) *Blood* **107**:3212.
3. van Kilsdonk, J.W.J. *et al.* (2008) *Cancer Res.* **68**:3671.
4. Ikeda, K. and T. Quertermous (2004) *J. Biol. Chem.* **279**:55315.
5. van Kempen, L.C. *et al.* (2001) *J. Biol. Chem.* **276**:25783.
6. Castro, M.A.A. *et al.* (2007) *J. Immunol.* **178**:4351.
7. Nair, P. *et al.* (2010) *Clin. Exp. Immunol.* **162**:116.
8. Masedunskas, A. *et al.* (2006) *FEBS Lett.* **580**:2637.
9. Cayrol, R. *et al.* (2008) *Nat. Immunol.* **9**:137.
10. Degen, W.G. *et al.* (1998) *Am. J. Pathol.* **152**:805.
11. King, J.A. *et al.* (2010) *Mol. Cancer* **9**:266.
12. Buhusi, M. *et al.* (2009) *J. Neurosci.* **29**:15630.