

## Product Information

### ALCAM/Fc CHIMERA

Human, Recombinant  
Expressed in mouse NSO cells

Product Number **A 1848**

#### Product Description

Recombinant Human ALCAM (activated leukocyte cell adhesion molecule)/Fc Chimera is produced from the extracellular domain of the human ALCAM protein (amino acid residues 1 to 526) fused by means of a polypeptide linker that is histidine-tagged at the carboxyl terminus.<sup>1</sup> Recombinant mature human ALCAM/Fc is a disulfide-linked homodimeric protein. From N-terminal sequencing, the mature protein begins with Trp 28 and has a calculated molecular mass of 83.5 kDa. As a result of glycosylation, the recombinant protein migrates at approximately 120 kDa in SDS-PAGE under reducing conditions. Human and mouse ALCAM show an overall identity of 93%.<sup>2</sup>

Human ALCAM (activated leukocyte cell adhesion molecule), a type I membrane glycoprotein, is a member of the immunoglobulin supergene family. It is also known as CD166, MEMD, SC-1/DM-GRASP/BEN (in the chicken), and KG-CAM (in the rat). Native ALCAM, 583 amino acid residues, consists of a 27 amino acid signal peptide, a 500 amino acid extracellular domain, a 24 amino acid transmembrane domain, and a 32 amino acid cytoplasmic domain. The extracellular domain of ALCAM contains 5 Ig-like domains that facilitate heterophilic (ALCAM-CD6) and homophilic (ALCAM-ALCAM) interactions.<sup>3,4</sup>

ALCAM is involved in various physiological processes including hematopoiesis,<sup>5,6</sup> thymus development,<sup>7</sup> the immune response,<sup>8</sup> neurite extension,<sup>9</sup> neural cell migration,<sup>10</sup> and osteogenesis.<sup>11</sup> It is suggested that ALCAM plays an important role in melanocytic tumor progression and may be a molecular marker for neoplastic progression of primary human melanoma.<sup>12</sup> ALCAM is also involved in the binding of T and B cells to activated leukocytes, as well as in interactions between cells of the nervous system. It is a ligand for the lymphocyte antigen CD6 (a member of the scavenger receptor cysteine-rich superfamily).<sup>13</sup> ALCAM also binds NgCam and other unidentified brain proteins.

Activated B and T cells, thymic epithelial cells, and monocytes express ALCAM. Expression is also found on fibroblasts, epithelial cells, neural cells, and cultured endothelial cells.<sup>1,4</sup> Additionally, ALCAM is found in healthy organs and various malignant tumor cell lines such as melanoma cells.<sup>4</sup>

The gene for human ALCAM has been mapped to chromosome 3q13.<sup>1</sup>

#### Reagent

Recombinant Human ALCAM/Fc Chimera is supplied as approximately 100 µg of protein lyophilized from a 0.2 µm filtered solution in phosphate buffered saline (PBS).

#### Preparation Instructions

Reconstitute the contents of the vial using sterile water. Prepare a stock solution of no less than 50 µg/ml.

#### Storage/Stability

Store at -20 °C. Upon reconstitution, store at 2 °C to 8 °C for one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Do not store in a frost-free freezer.

#### Product Profile

Recombinant Human ALCAM/Fc Chimera is measured by its ability to block adhesion of HUT-78, a human cutaneous T cell lymphoma, to immobilized recombinant human CD6/Fc protein.

Recombinant Human ALCAM/Fc Chimera at 5 µg/ml (50 µl/well) blocks 100% of HUT-78 cell adhesion (1x10<sup>6</sup> cells/ml, 50 µl/well) to 10 µg/ml (100 µl/well, immobilized) recombinant human CD6/Fc.

Purity: > 95 % as determined by SDS-PAGE, visualized by silver stain.

Endotoxin level is < 0.1 ng/µg protein as determined by the LAL (Limulus amoebocyte lysate) method.

## References

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