Data Sheet (Cat.No.TMPY-01830)

TargetMol

VCAM-1 Protein, Mouse, Recombinant (His)

General Information

Synonyms:	Vcam-1;CD106;vascular cell adhesion molecule 1
Protein Construction:	Phe25-Glu698
Species:	Mouse
Expression Host:	HEK293 Cells
Accession:	NP_035823.3
Molecular Weight:	75.8 kDa (predicted); 80-100 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Measured by the ability of the immobilized protein to support adhesion of U937 human histiocytic lymphoma cells. When 5 x 10E4 cells/well are added to mouse VCAM1 coated plates (10 μg/ml with 100 μl/well), approximately 70%-80% cells will adhere after 1 hour at RT.
Purity:	> 97 % 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:

Reconstitute the lyophilized protein in distilled water. The product concentration should not be less than 100 μg/ml. Before opening, centrifuge the tube to collect powder at the bottom. After adding the reconstitution buffer, avoid vortexing or pipetting for mixing.

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

Vascular cell adhesion molecule 1 (VCAM-1), also known as CD106, is a cell surface sialoglycoprotein belonging to the immunoglobulin superfamily. Two forms of VCAM-1 with either six or seven extracellular Ig-like domains are

generated by alternative splicing, with the longer form predominant. VCAM-1 is an endothelial ligand for very late antigen-4 (VLA-4) and α4ß7 integrin expressed on leukocytes, and thus mediates leukocyte-endothelial cell adhesion and signal transduction. VCAM-1 expression is induced on endothelial cells during inflammatory bowel disease, atherosclerosis, allograft rejection, infection, and asthmatic responses. During these responses, VCAM-1 forms a scaffold for leukocyte migration. VCAM-1 also activates signals within endothelial cells resulting in the opening of an "endothelial cell gate" through which leukocytes migrate. VCAM-1 has been identified as a potential anti-inflammatory therapeutic target, the hypothesis being that reduced expression of VCAM-1 will slow the development of atherosclerosis. In addition, VCAM-1-activated signals in endothelial cells are regulated by cytokines indicating that it is important to consider both endothelial cell adhesion molecule expression and function during inflammatory processes.Cancer ImmunotherapyImmune CheckpointImmunotherapyTargeted Therapy

Reference

Cook-Mills JM. (2002) VCAM-1 signals during lymphocyte migration: role of reactive oxygen species. Mol Immunol. 39(9): 499-508.

Preiss DJ, et al. (2007) Vascular cell adhesion molecule-1: a viable therapeutic target for atherosclerosis? Int J Clin Pract. 61(4): 697-701.