

## CD146/MCAM Protein, Human, Recombinant (hFc)

### General Information

Synonyms:	MUC18;melanoma cell adhesion molecule;CD146
Protein Construction:	A DNA sequence encoding the extracellular domain (Met 1-Gly 559) of human CD146 precursor (NP_006491.2) was expressed with the C-terminal fused Fc region of human IgG1. Predicted N terminal: Val 24
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P43121
Molecular Weight:	86.4 kDa (predicted); 120-130 kDa (reducing condition, due to glycosylation)

### QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
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

The CD146 antigen, also known as melanoma cell adhesion molecule (MCAM) and MUC18, is an integral membrane glycoprotein belonging to the immunoglobulin superfamily. CD146 contains the characteristic immunoglobulin-like domains (V-V-C2-C2-C2), a transmembrane region, and a short cytoplasmic tail. The CD146 expression is detected in endothelial cells in vascular tissue throughout the body and plays a role in cell adhesion,

as well as in cohesion of the endothelial monolayer at intercellular junctions in vascular tissue. As a Ca<sup>2+</sup>-independent cell adhesion molecule involved in heterophilic cell to cell interactions and a surface receptor, CD146 triggers tyrosine phosphorylation of FYN and PTK2 and subsequently induced signal transduction, proteolysis, or immune recognition. This protein is also expressed predominantly on metastatic lesions and advanced primary tumors, and thus has been suggested to play an important role in tumor progression and the development of metastasis in certain human carcinomas.

### Reference

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- Bidlingmaier S, et al. (2009) Identification of MCAM/CD146 as the target antigen of a human monoclonal antibody that recognizes both epithelioid and sarcomatoid types of mesothelioma. *Cancer Res.* 69(4): 1570-7.
- Boneberg EM, et al. (2009) Soluble CD146 is generated by ectodomain shedding of membrane CD146 in a calcium-induced, matrix metalloprotease-dependent process. *Microvasc Res.* 78(3): 325-31.

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