

## CD6 Protein, Rat, Recombinant (His)

### General Information

Synonyms:	CD6 molecule
Protein Construction:	A DNA sequence encoding the rat CD6 (Q812A4) (Met1-Asn396) was expressed with a polyhistidine tag at the C-terminus. Predicted N terminal: Leu 18
Species:	Rat
Expression Host:	HEK293 Cells
Accession:	Q812A4
Molecular Weight:	42.5 kDa (predicted); 64-70 kDa (reducing condition, due to glycosylation)

### QC Testing

Biological Activity:	<ol style="list-style-type: none"><li>1. Immobilized rat CD6-His at 10 µg/mL (100 µL/well) can bind rat ALCAM-Fc3 , The EC50 of rat ALCAM-Fc3 is 19.5-45.5 ng/ml.</li><li>2. Measured by the ability of the immobilized protein to support the adhesion of Jurkat human acute T cell leukemia cells. When 8×10E4 cells/well are added to ratCD6-His coated plates (5 µg/mL and 100 µL/well) in the presence of 10µg/ml PHA, approximately &gt; 50% cells will adhere specifically after 60 minutes at 37°C.</li></ol>
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

T-cell differentiation antigen CD6, also known as TP12 and CD6, is a single-pass type I membrane protein which contains three SRCR domains. CD6 / TP12 is a cell surface glycoprotein expressed primarily on T cells, it may function as a costimulatory molecule and may play a role in autoreactive immune responses. CD6 / TP12 is expressed by thymocytes, mature T-cells, a subset of B-cells known as B-1 cells, and by some cells in the brain. CD6 ligand termed CD166 (previously known as activated leukocyte cell adhesion molecule, ALCAM ) has been identified and shown to be expressed on activated T cells, B cells, thymic epithelium, keratinocytes, and in rheumatoid arthritis synovial tissue. CD6 / TP12 binds to activated leukocyte cell adhesion molecule ( CD166 ), and is considered as a costimulatory molecule involved in lymphocyte activation and thymocyte development. CD6 / TP12 partially associates with the TCR / CD3 complex and colocalizes with it at the center of the mature immunological synapse (IS) on T lymphocytes. During thymic development CD6-dependent signals may contribute both to thymocyte survival, and to the overall functional avidity of selection in both man and mouse.

### Reference

- Joo YS. et al., 2000, Arthritis Rheum. 43 (2): 329-35.  
Singer NG. et al., 2002, Int Immunol. 14 (6): 585-97.  
Gimferrer I. et al., 2005, J Immunol. 175 (3): 1406-14.  
Alonso R. et al., 2010, J Autoimmun. 35 (4): 336-41.

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