# Recombinant Mouse CD6 His Tagged

Catalog Number: 9946-CD

## DESCRIPTION

| | |
|---|---|
| **Source** | Mouse myeloma cell line, NS0-derived mouse CD6 protein<br>Leu18-Gly396, with a C-Terminal 6-His tag<br>Accession # Q61003-1 |
| **N-terminal Sequence Analysis** | Leu18 |
| **Predicted Molecular Mass** | 42 kDa |

## SPECIFICATIONS

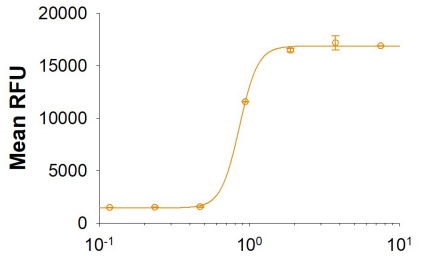
| | |
|---|---|
| **SDS-PAGE** | 70-80 kDa, reducing conditions |
| **Activity** | Measured by the ability of the immobilized protein to support the adhesion of HuT 78 human cutaneous T cell lymphoma cells. The $ED_{50}$ for this effect is 0.4-2.4 µg/mL. |
| **Endotoxin Level** | <0.10 EU per 1 µg of the protein by the LAL method. |
| **Purity** | >95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining. |
| **Formulation** | Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details. |

## PREPARATION AND STORAGE

| | |
|---|---|
| **Reconstitution** | Reconstitute at 500 µg/mL in PBS. |
| **Shipping** | The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. |
| **Stability & Storage** | • 12 months from date of receipt, ≤ -20 °C as supplied.<br>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.<br>• 3 months, ≤ -20 °C under sterile conditions after reconstitution. |

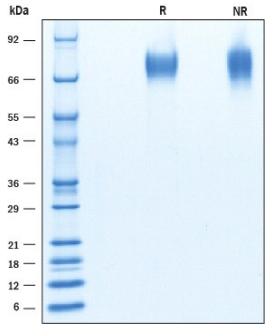
## DATA

**Bioactivity**




Immobilized Recombinant Mouse CD6 (Catalog # 9946-CD) supports the adhesion of HuT 78 human cutaneous T cell lymphoma cells. The $ED_{50}$ for this effect is 0.4-2.4 µg/mL.

**SDS-PAGE**




2 µg/lane of Recombinant Mouse CD6 was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® blue staining, showing bands at 70 - 80 kDa.



bio-techne®
Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449

# Recombinant Mouse CD6 His Tagged

Catalog Number: 9946-CD

## BACKGROUND

CD6 is a member of the scavenger receptor cysteine-rich (SRCR) superfamily, which is characterized by the presence of one or several repeats of SRCR domains in their extracellular region (1). CD6 is a type I transmembrane glycoprotein and contains three extracellular SRCR domains (2, 3). It is expressed on thymocytes, T cells, a subset of B cells, and on certain regions of the brain (3, 4). Mouse CD6 is a 665 amino acid (aa) protein that includes a 16 aa signal sequence, a 382 aa extracellular domain, a 21 aa transmembrane segment, and a 246 aa cytoplasmic region (5, 6). Within the ECD, mouse CD6 shares 69% and 88% aa sequence identity with human and rat CD6, respectively. CD6 appears to play a role as both a co-stimulatory molecule in T cell activation and as an adhesion receptor. Studies demonstrating a mitogenic effect for T cells with some CD6-specific monoclonal antibodies, in conjunction with either accessory cells or PMA and anti-CD2 mAb, support the concept of CD6 as a co-stimulatory molecule (7-12). Additionally, anti-CD6 monoclonal antibody has been used as an immunosuppressive agent for patients undergoing kidney or bone marrow allograft rejection. It has also been used to remove $CD6^+$ T cells from donor bone marrow prior to allogenic bone marrow transplantation. Other studies have demonstrated an adhesive role for CD6. It has been demonstrated to bind the activated leukocyte cell adhesion molecule (ALCAM, CD166). CD6/ALCAM interactions have been postulated to play a role in thymocyte development (9, 13). Additionally, the presence of ALCAM on neuronal cells may provide a mechanism of interaction between $CD6^+$ T cell and $ALCAM^+$ neuronal cells. Phosphorylation of the CD6 molecule appears to play a role in CD6-mediated signal transduction (9, 13). Serine and threonine residues become hyperphosphorylated and tyrosine residues become phosphorylated when T cells are activated with anti-CD6 mAb in conjunction with PMA, anti-CD2, or anti-CD3 mAb (8, 10, 11, 14). The CD6 intracellular domain contains regions that can interact with SH2 or SH3-containing proteins. However, the signaling pathways have not been elucidated (5, 15, 16).

**References:**

1. Sarrias, M. *et al.* (2007) Proc. Natl. Acad. Sci. USA. **104**:11724.
2. Chappell, P. *et al.* (2015) Structure. **23**:1426.
3. Whitney, G.S. *et al.* (1995) J. Biol. Chem. **270**:18187.
4. Mayer, B. *et al.* (1990) J. Neuroimmunol. **29**:193.
5. Robinson, W.H. *et al.* (1995) J. Immunol. **155**:4739.
6. Aruffo, A. *et al.* (1997) Immunol. Today **18**:498.
7. Gangemi, R. *et al.* (1989) J. Immunol. **143**:2439.
8. Swack, J.A. *et al.* (1991) J. Biol. Chem. **266**:7137.
9. Starling, G.C. *et al.* (1996) Eur. J. Immunol. **26**:738.
10. Swack, J.A. *et al.* (1989) Mol. Immunol. **26**:1037.
11. Pawelec, G. and H.J. Buhring (1991) Human Immunol. **31**:165.
12. Singer, N.G. *et al.* (1996) Immunology **88**:537.
13. Degen, W.G. *et al.* (1998) Am. J. Pathol. **152**:805.
14. Osorio, L.M. *et al.* (1995) Cell Immunol. **166**:44.
15. Robinson, W.H. *et al.* (1995) Eur. J. Immunol. **25**:2765.
16. Whitney, G. *et al.* (1995) Mol. Immunol. **32**:89.



bio-techne®
**Global** bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
**USA** TEL 800 343 7475 **Canada** TEL 855 668 8722 **China** TEL +86 (21) 52380373
**Europe | Middle East | Africa** TEL +44 (0)1235 529449