

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived		
	MD	Human IgG ₁ (Pro100-Lys330)	IEGR
	N-terminus		C-terminus
			Human CD81 LEL (Phe113-Lys201) Accession # P60033

N-terminal Sequence Met Analysis

Structure / Form Disulfide-linked homodimer

Predicted Molecular Mass 36 kDa

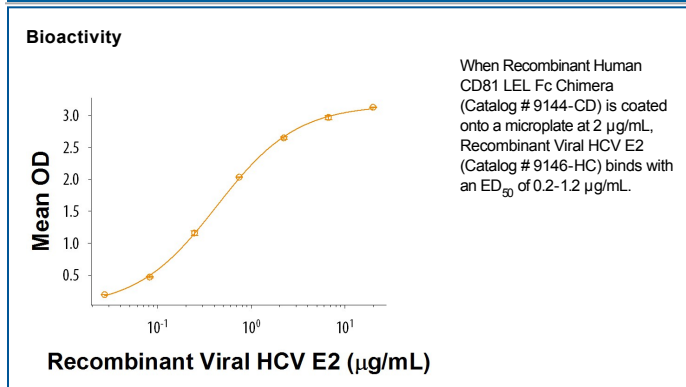
SPECIFICATIONS

SDS-PAGE	36-41 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Human CD81 LEL Fc Chimera is coated onto a microplate at 2 µg/mL, Recombinant Viral HCV E2 (Catalog # 9146-HC) binds with an ED ₅₀ of 0.2-1.2 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 100 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

DATA



BACKGROUND

CD81, also known as TAPA-1 and Tetraspanin-28, is an approximately 25 kDa palmitoylated component of plasma membrane lipid rafts (1). It contains four transmembrane segments, two extracellular loops of 30 and 90 amino acids (aa), and three short cytoplasmic regions (2, 3). Within the large extracellular loop, human CD81 shares 90% and 84% aa sequence identity with mouse and rat CD81, respectively. CD81 associates with a wide range of membrane proteins including CD151, TfR2, LDL R, PCSK9, Glypican 3, IFITM1, IGSF8/CD316, FPRP, and complexes of CD19-CD21 (4-11). It is required for the development of CD4⁺CD8⁺ DP thymocytes (12) and hepatocyte infection by Plasmodium sporozoites (13). It also supports B cell receptor signaling (11), Hepcidin expression (5), monocyte and B cell tethering to the vascular endothelium (14), and the immunosuppressive function of Treg and MDSC (15). CD81 additionally functions as a receptor for the E2 glycoprotein of hepatitis C virus (16). The CD81-E2 interaction inhibits NK cell cytolytic activity, provides a co-stimulatory signal to T cells, and inhibits the maturation of plasmacytoid dendritic cells (17-19).

References:

1. Charrin, S. *et al.* (2014) *J. Cell Sci.* **127**:3641.
2. Oren, R. *et al.* (1990) *Mol. Cell. Biol.* **10**:4007.
3. Levy, S. *et al.* (1991) *J. Biol. Chem.* **266**:14597.
4. Zhu, Y.-Z. *et al.* (2012) *Virology* **429**:112.
5. Chen, J. and C.A. Enns (2015) *J. Biol. Chem.* **290**:7841.
6. Le, Q.-T. *et al.* (2015) *J. Biol. Chem.* **290**:23385.
7. Takahashi, S. *et al.* (1990) *J. Immunol.* **145**:2207.
8. Stipp, C.S. *et al.* (2001) *J. Biol. Chem.* **276**:40545.
9. Stipp, C.S. *et al.* (2001) *J. Biol. Chem.* **276**:4853.
10. Liu, B. *et al.* (2009) *Am. J. Pathol.* **175**:717.
11. Cherukuri, A. *et al.* (2004) *J. Immunol.* **279**:31973.
12. Boismenu, R. *et al.* (1996) *Science* **271**:198.
13. Silvie, O. *et al.* (2003) *Nat. Med.* **9**:93.
14. Feigelson, S.W. *et al.* (2003) *J. Biol. Chem.* **278**:51203.
15. Vences-Catalan, F. *et al.* (2015) *Cancer Res.* **75**:4517.
16. Pileri, P. *et al.* (1998) *Science* **282**:938.
17. Crotta, S. *et al.* (2002) *J. Exp. Med.* **195**:35.
18. Tseng, C.-T. and G.R. Klimpel (2002) *J. Exp. Med.* **195**:43.
19. Tu, Z. *et al.* (2013) *Cell. Immunol.* **284**:98.