

**DESCRIPTION**

<b>Source</b>	Chinese Hamster Ovary cell line, CHO-derived human CD97 protein Gln21-Gln398, with a C-terminal 6-His tag Accession # P48960-2
<b>N-terminal Sequence Analysis</b>	No results obtained. Gln21 is inferred from enzymatic pyroglutamate treatment revealing Asp22.
<b>Predicted Molecular Mass</b>	42 kDa

**SPECIFICATIONS**

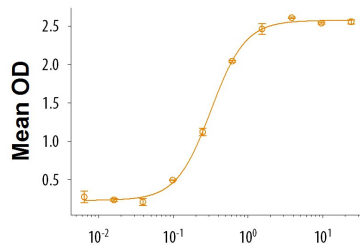
<b>SDS-PAGE</b>	60-90 kDa, under reducing conditions
<b>Activity</b>	Measured by the ability of the immobilized protein to support the adhesion of human red blood cells. Hamann, J. <i>et al.</i> (1996) J. Exp. Med. <b>184</b> :1185. The ED <sub>50</sub> for this effect is 0.05-0.4 µg/mL.
<b>Endotoxin Level</b>	<0.10 EU per 1 µg of the protein by the LAL method.
<b>Purity</b>	>90%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 500 µg/mL in PBS.
<b>Shipping</b>	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 3 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

**DATA**

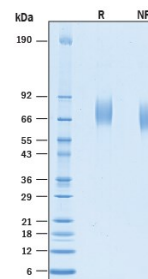
**Bioactivity**



Immobilized Recombinant Human CD97 (Catalog # 10134-CD) supports the adhesion of human red blood cells. The ED<sub>50</sub> for this effect is 0.05-0.4 µg/mL.

Recombinant Human CD97 (µg/mL)

**SDS-PAGE**



2 µg/lane of Recombinant Human CD97 His-tag (Catalog # 10134-CD) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 60-90 kDa.

**BACKGROUND**

CD97 is a member of the epidermal growth factor-seven transmembrane (EGF-TM7) subfamily of G-protein coupled receptors (1). Mature human CD-97 contains a large extracellular domain (ECD) followed by 7 transmembrane domains. Alternative splicing encodes 3 isoforms of the ECD with varying numbers of EGF-like repeats (4). Isoform 1, being the longest, contains 5 EGF-like domains, while isoform 2, which is described in this insert, is missing amino acids (aa) 116-208, corresponding to EGF-like domains 3 and 4. Mature isoform 2 of human CD97 shares 50% aa identity with the mouse protein. The EGF-like domains mediate binding to chondroitin sulfate and the complement regulatory protein CD55 (2, 3). CD97 may play a role inflammatory and immune responses as well as the progression of several types of cancer (3). Cells known to express CD97 include monocytes, macrophages, T cells, select B cells, dendritic cells and, potentially, vascular and visceral smooth muscle cells (5-7). CD97 is also differentially expressed on murine hematopoietic stem- and progenitor-cells (7). CD55 (decay accelerating factor), a GPI-linked cell surface molecule with short consensus repeats that regulates complement activation on cell surfaces, chondroitin sulfate and the integrin alpha 5 beta (also known as VLA-5) have been identified as cellular ligands for CD97 (7). The composition of the EGF domain region defines the ligand specificity of the different CD97 isoforms (7). The first and second EGF domains interact with CD55, whereas the fourth EGF domain binds chondroitin sulfate (7). The ligand affinity of the CD97 isoforms differs (7). While affinity for CD55 is significantly higher for the smaller isoforms, chondroitin sulfate interacts exclusively with the largest isoforms (7). Lymphocytes and erythrocytes (red blood cells) have been shown to specifically adhere to CD97-transfected COS cells. The adhesion of red blood cells to CD97 transfectants was blocked using a mAb which recognizes CD55 (8). It has also been demonstrated that CD97 is required for neutrophil migration and host defense (9).

**References:**

1. Veninga, H. *et al.* (2008) *J. Immunol.* **181**:6574.
2. Wobus, M. *et al.* (2004) *Int. J. Cancer.* **112**:815.
3. Lin, H.H. *et al.* (2001) *J. Biol. Chem.* **276**:24160.
4. Gray, J.X. *et al.* (1996) *J. Immunol.* **157**:5438.
5. McKnight, A.J. and S. Gordon (1998) *J Leukoc. Biol.* **63**:271.
6. Jaspars, L.H. *et al.* (2001) *Tissue Antigens* **57**:325.
7. Van Pel, M. *et al.* (2008) *Haematologica* **93**:1137.
8. Hamann, J. *et al.* (2019) *J Exp Med.* **184**:1185.
9. Leemans, J.C. *et al.* (2004) *J. Immunol.* **172**:1125.