

## DESCRIPTION

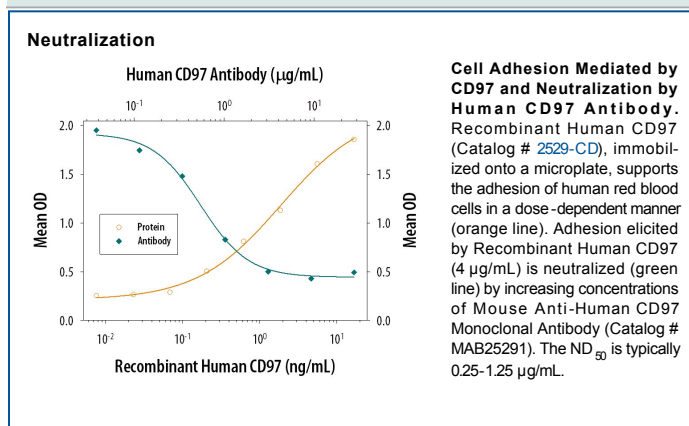
<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human CD97 in ELISAs. In sandwich immunoassays, no cross-reactivity or interference with recombinant human (rh) CD55, rhEGF, rhEMR2, or recombinant mouse CD97 is observed.
<b>Source</b>	Monoclonal Mouse IgG <sub>2B</sub> Clone # 380905
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant human CD97 Gln21-Gln398 Accession # NP_001775.2
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

## APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

Human CD97 Sandwich Immunoassay		Reagent
<b>ELISA Capture</b>	2-8 µg/mL	Human CD97 Antibody (Catalog # <a href="#">MAB25291</a> )
<b>ELISA Detection</b>	0.1-0.4 µg/mL	Human CD97 Biotinylated Antibody (Catalog # <a href="#">BAF2529</a> )
<b>Standard</b>		Recombinant Human CD97 (Catalog # <a href="#">2529-CD</a> )
<b>Neutralization</b>	Measured by its ability to neutralize CD97-mediated adhesion of human red blood cells. Hamann, J. <i>et al.</i> (1996) <i>J. Exp. Med.</i> <b>184</b> :1185. The Neutralization Dose (ND <sub>50</sub> ) is typically 0.25-1.25 µg/mL in the presence of 4 µg/mL Recombinant Human CD97.	

## DATA



## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.5 mg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<p><b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b></p> <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>● 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## BACKGROUND

CD97 is a 95-100 kDa member of a protein group known as the LNB-TM7 protein family that evolved from genes of the secretin receptor superfamily (1-3). Molecules in this family are unique hybrid structures consisting of EGF-like modules coupled to class B G-protein 7-transmembrane (TM) domains by a glycosylated (mucin) stalk. Human CD97 is synthesized as an 835 amino acid (aa) precursor that contains a 20 aa signal sequence, a 532 aa extracellular domain (ECD), a 238 aa "transmembrane" region that includes seven TM segments, and a 45 aa cytoplasmic tail (4). Within the 532 aa ECD, the first 236 aa contains five EGF-like domains, the C-terminal four of which bind calcium, and a juxtamembrane 296 aa RGD-containing mucin stalk (4, 5). The stalk is both glycosylated and proteolytically cleaved (at aa 530) to create a noncovalently linked 65-70 kDa glycosylated extracellular  $\alpha$ -subunit and a 28 kDa 7-TM membrane-bound  $\beta$ -subunit (4). There are two known alternate splice forms in human. Isoform # 1 contains four EGF-like domains (domain # 1, 2, 3 and 5), while isoform # 2 contains three EGF-like domains (domain # 1, 2 and 5) (1, 4, 6). The ECD in isoform 1 is 60 kDa in size, while the ECD in isoform 2 is 55 kDa in size (native molecular weight). The five EGF-like domain region in human shares 55% aa sequence identity with that in mouse. Cells known to express CD97 include monocytes, macrophages, T cells, select B cells, dendritic cells and, potentially, vascular and visceral smooth muscle cells (1, 7). There are at least two ligands for CD97. One is chondroitin sulfate that binds only to the full-length (five domain) form of CD97. Binding is dependent on the presence of EGF-like domain # 4 (3). The second ligand for CD97 is CD55, a GPI-linked cell surface molecule with short consensus repeats that regulates complement activation on cell surfaces (1, 5, 7). CD97 EGF-like domains # 1 and 2 bind CD55 while domain # 5 stabilizes the CD97 molecule. The shortest CD97 isoform shows the strongest binding to CD55 (7, 8).

## References:

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3. Stacey, M. *et al.* (2003) *Blood* **102**:2916.
4. Gray, J.X. *et al.* (1996) *J. Immunol.* **157**:5438.
5. Lin, H-H. *et al.* (2001) *J. Biol. Chem.* **276**:24160.
6. Hamann, J. *et al.* (1995) *J. Immunol.* **155**:1942.
7. Jaspars, L.H. *et al.* (2001) *Tissue Antigens* **57**:325.
8. Hamann, J. *et al.* (1996) *J. Exp. Med.* **184**:1185.