Data Sheet (Cat.No.TMPY-01365)

CD97 Protein, Human, Recombinant (His)

General Information

Synonyms:	CD97;adhesion G protein-coupled receptor E5;TM7LN1
Protein Construction:	A DNA sequence encoding the first 398 amino acids (Met 1-Gln 398) of human CD97 isoform 2 (NP_001775.2) extracellular domain was fused with a polyhistidine tag at the C-terminus. Predicted N terminal: Gln 21
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P48960-2
Molecular Weight:	42.6 kDa (predicted); 60-70 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	1. Measured by its binding ability in a functional ELISA. Immobilized recombinant human CD97 at 10 μg/ml (100 μl/well) can bind recombinant human CD55 at a linear range of 0.46-30 μg/ml. 2. Using the Octet RED System, the affinity constant (Kd) of Anti-CD97 Antibody bound to CD97 Protein, Human, Recombinant (His Tag) was 0.2 nM.
Purity:	> 85 % 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

The cluster of differentiation (CD) system is commonly used as cell markers in immunophenotyping. Different kinds of cells in the immune system can be identified through the surface CD molecules which associating with the immune function of the cell. There are more than 32 CD unique clusters and subclusters have been identified. Some of the CD molecules serve as receptors or ligands important to the cell through initiating a signal cascade which then alter the behavior of the cell. Some CD proteins do not take part in cell signal process but have other functions such as cell adhesion. The CD97 is a receptor predominantly expressed in leukocytes and belongs to a new group of seven-span transmembrane molecules, which is also designed EGF-TM7 family. The family members are characterized by an extended extracellular region with several N-terminal epidermal growth factor-like domains two of which contain a calcium-binding site. Mature CD 97 has two noncovalently associated subunits and is composed of a large extracellular protein (CD97 alpha) and a seven-membrane spanning protein (CD97 beta). CD97 is considered as a defining feature of G protein-coupled receptors. The effects that lymphocytes and erythrocytes adhere to CD97-transfected COS cells suggest that CD97 has the ability to bind cellular ligands. CD97 alpha has three alternatively spliced isoforms that are related to the calcium-binding EGF-like repeats in the microfibril protein fibrillin. Leukocytes strongly positive for CD97 are concentrated at sites of inflammation relative to CD97 expression in normal lymphoid tissues.

Reference

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Matesanz-Isabel J, et al. (2011) New B-cell CD molecules. Immunology Letters.134 (2): 104-12.
Gray JX, et al. (1996) CD97 is a processed, seven-transmembrane, heterodimeric receptor associated with inflammation. The journal of Immunology. 157 (12): 5438-47.
HAmann J, et al. (1998) Characterization of the CD55 (DAF)-binding site on the seven-span transmembrane receptor CD97.European Journal of Immunology. 28 (5): 1701-7.