Data Sheet (Cat.No.TMPY-02045)

TargetMol

SECTM1 Protein, Human, Recombinant (His)

General Information

Synonyms: K12;secreted and transmembrane 1

Protein Construction: A DNA sequence encoding the human SECTM1 (Q8WVN6-1) extracellular domain (Met 1-Gly 145) was fused with a polyhistidine tag at the C-terminus Predicted N terminal: Gln 29

Species: Human

Expression Host: HEK293 Cells

Accession: Q8WVN6-1

Molecular Weight: 14 kDa (predicted); 23 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity: Recombinant Cynomolgus CD7 Protein (His Tag) (Cat#TMPY-06621) immobilized on CM5 chip, can bind Recombinant Human SECTM1/K12 Protein (His Tag) (Cat#TMPY-02045) with an affinity constant of 0.174 μM as determined in an SPR assay (Biacore 8K) (Routinely tested).

Purity: > 97 % 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

Secreted and transmembrane 1 (SECTM1), also known as K12, is a transmembrane and secreted protein with characteristics of a type 1a transmembrane protein of SECTM family. It is found in a perinuclear Golgi-like pattern and thought to be involved in hematopoietic and/or immune system processes. The human K12 protein has been shown to be primarily expressed in spleen, prostate, testis, small intestine, and in peripheral blood leukocytes. The

K12 protein is expressed on the cell surface in such small amounts as to preclude detection. Alternatively, it may be that K12 on the cell surface is rapidly cleaved to generate a soluble K12 protein. Immunohistochemical analysis of peripheral blood cells shows that K12 is found in leukocytes of the myeloid lineage, with the strongest staining observed in granulocytes and no detectable expression in lymphocytes. May be involved in thymocyte signaling. It had been suggested a role for thymic microenvironment-produced K12 in regulation of thymocyte signaling and cytokine release, particularly in the setting of thymus pathology where IFN-gamma is upregulated such as myasthenia gravis. In addition, as a putative natural CD7 ligand, SECTM1/K12 may be responsible for the costimulatory role it plays in T cell activation.

Reference

Leta E,et al.(1995) Production and characterization of the extracellular domain of human CD7 antigen: further evidence that CD7 has a role in T cell signaling. Cell Immunol. 165(1): 101-9.

Slentz-Kesler KA,et al.(1998) Identification and characterization of K12 (SECTM1), a novel human gene that encodes a Golgi-associated protein with transmembrane and secreted isoforms. Genomics. 47(3): 327-40.

Lyman SD,et al.(2000) Identification of CD7 as a cognate of the human K12 (SECTM1) protein. J Biol Chem. 275(5): 3431-7.

Lam GK,et al.(2005) Expression of the CD7 ligand K-12 in human thymic epithelial cells: regulation by IFN-gamma. J Clin Immunol. 25(1): 41-9.