Data Sheet (Cat.No.TMPY-00882)

TargetMol

Mer Protein, Human, Recombinant (His & hFc)

General Information

Synonyms:	RP38;c-Eyk;c-mer;Tyro12;MER proto-oncogene, tyrosine kinase;MER
Protein Construction:	A DNA sequence encoding the extracellular domain (Met 1-Ala 499) of human Mer precursor (NP_006334.2) was fused with the polyhistidine-tagged Fc region of human IgG1 at the C-terminus. Predicted N terminal: Ala 21
Species:	Human
Expression Host:	HEK293 Cells
Accession:	Q12866
Molecular Weight:	80 kDa (predicted); 140-150 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
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:

Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.

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

Proto-oncogene tyrosine-protein kinase MER (MERTK) is a member of the MER/AXL/TYRO3 receptor kinase family and encodes a transmembrane protein with two fibronectin type-III domains, two Ig-like C2-type (immunoglobulin-like) domains, and one tyrosine kinase domain. MERTK is localized in the membrane and is no expressed in normal B- and T-lymphocytes but is expressed in numerous neoplastic B- and T-cell lines. This

protein is highly expressed in the testis, ovary, prostate, lung, and kidney, with lower expression in the spleen, small intestine, colon, and liver. MERTK regulates many physiological processes including cell survival, migration, differentiation, and phagocytosis of apoptotic cells (efferocytosis). Ligand binding at the cell surface induces autophosphorylation of MERTK on its intracellular domain that provides docking sites for downstream signaling molecules. MERTK signaling plays a role in various processes such as macrophage clearance of apoptotic cells, platelet aggregation, cytoskeleton reorganization, and engulfment. MERTK plays also an important role in the inhibition of Toll-like receptors (TLRs)-mediated innate immune response by activating STAT1, which selectively induces the production of suppressors of cytokine signaling SOCS1 and SOCS3. Defects in MERTK are the cause of retinitis pigmentosa type 38.

Reference

Thompson DA,et al. (2002) Retinal dystrophy due to paternal isodisomy for chromosome 1 or chromosome 2, with homoallelism for mutations in RPE65 or MERTK, respectively. Am J Hum Genet. 70 (1): 224-9.
Tada A,et al. (2006) Screening of the MERTK gene for mutations in Japanese patients with autosomal recessive retinitis pigmentosa. Mol Vis. 12: 441-4.
McHenry CL,et al. (2004) MERTK arginine-844-cysteine in a patient with severe rod-cone dystrophy: loss of mutant protein function in transfected cells. Invest Ophthalmol. Vis Sci. 45 (5): 1456-63.