Data Sheet (Cat.No.TMPY-06566)

TargetMol

TREM-2 Protein, Human, Recombinant (hFc)

General Information

Synonyms:	Trem2b;TREM-2;Trem2a;Trem2c;triggering receptor expressed on myeloid cells 2
Protein Construction:	A DNA sequence encoding the human TREM2 (NP_061838.1) (Met1-Ser174) was expressed with the fused Fc region of human IgG1 at the C-terminus. Predicted N terminal: His 19
Species:	Human
Expression Host:	HEK293 Cells
Accession:	NP_061838.1
Molecular Weight:	44.16 kDa (predicted); 60.11 kDa (reducing conditions)

QC Testing

Biological Activity:	Loaded Recombinant Human TREM-2 Protein, hFc Tag (Cat#TMPY-06566) on proA Biosensor, can bind Recombinant Human Apolipoprotein E/APOE Protein, isoform E3, His & Trx Tag (Cat#TMPY-05297) with an affinity constant of 33.6 nM as determined in BLI assay (Sartorius Octet RED384) (Routinely tested).
Purity:	> 95 % 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

Triggering receptor expressed on myeloid cells 2 (TREM2) is a single Ig domain receptor. It is expressed on macrophages and dendritic cells but not on granulocytes or monocytes. Its expression is most abundant in the basal ganglia, corpus callosum, medulla oblongata and spinal cord, and microglial cells are the major TREM2-

producing cell type in the central nervous system (CNS). TREM2 may play a role in chronic inflammations and may stimulate production of constitutive rather than inflammatory chemokines and cytokines. TREM2 forms a receptor signaling complex with TYROBP and triggers activation of the immune responses in macrophages and dendritic cells. It also associates with the signal adapter protein, DAP12, which has a cytoplasmic ITAM, leading to the subsequent activation of cytoplasmic tyrosine kinases. TREM2 is both required and sufficient for competent uptake of apoptotic neuronal cells. TREM2 and TREM2-L form a receptor-ligand pair connecting microglia with apoptotic neurons, directing removal of damaged cells to allow repair. Deficiency of the adapter protein DAP12 or its associated receptor TREM2 is associated with abnormal osteoclast development in humans. Defects in TREM2 are causes of PLOSL, also known as NHD. In addition, TREM2 signaling is also an important pathway to promote healing of wounds in the colon where stem cell replacement is necessary.

Reference

Bouchon, A. et al., 2000, J. Immunol. 164: 4991-4995.
Bouchon, A. et al., 2001, Nature. 410: 1103-1107.
Bleharski, J.R. et al., 2003, J. Immunol. 170: 3812-3818.