Data Sheet (Cat.No.TMPK-00874)

TargetMol

Thyroid Peroxidase Protein, Mouse, Recombinant (His)

General Information

Synonyms:	MK-CSF;MGDF;ML;MPLLG;THPO;TPOMKCSF;Thrombopoietin;MKCSF;MGDFC-mpl ligand; THCYT1;TPO;MGC163194;MPL ligand
Protein Construction:	Gly32-Arg834
Species:	Mouse
Expression Host:	HEK293 Cells
Accession:	P35419
Molecular Weight:	90.6 kDa (predicted). Due to glycosylation, the protein migrates to 100-115 kDa based on Tris-Bis PAGE result.

QC Testing

Biological Activity:	Activity has not been tested. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 95% as determined by Tris-Bis PAGE; > 95% as determined by HPLC
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, 8% trehalose is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

Reconstitute the lyophilized protein in distilled water. The product concentration should not be less than 100 μg/ml. Before opening, centrifuge the tube to collect powder at the bottom. After adding the reconstitution buffer, avoid vortexing or pipetting for mixing.

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

Thyroid peroxidase, also called thyroperoxidase (TPO) or iodide peroxidase that encodes a 933 amino-acid residue (aa) molecule with a single membrane-spanning region. Thyroid peroxidase plays a key role in thyroid hormone synthesis by catalyzing both the iodination of tyrosine residues to form monoiodotyrosine (MIT) and diiodotyrosine (DIT) residues and the coupling of iodotyrosine residues in Tg, resulting in the formation of T3 and

T4. It is a frequent epitope of autoantibodies in autoimmune thyroid disease, for example, the expression of thyroid peroxidase is lost in papillary thyroid carcinoma.

Reference

Ruf J, Carayon P. Structural and functional aspects of thyroid peroxidase. Arch Biochem Biophys. 2006 Jan 15;445 (2):269-77. doi: 10.1016/j.abb.2005.06.023. Epub 2005 Jul 27. PMID: 16098474.

Chardès T, et al. The human anti-thyroid peroxidase autoantibody repertoire in Graves' and Hashimoto's autoimmune thyroid diseases. Immunogenetics. 2002 Jun;54(3):141-57. doi: 10.1007/s00251-002-0453-9. Epub 2002 May 3. PMID: 12073143

Shield PW, et al. Identification of metastatic papillary thyroid carcinoma in FNA specimens using thyroid peroxidase immunohistochemistry. Cytopathology. 2018 Jun;29(3):227-232. doi: 10.1111/cyt.1253Epub 2018 Mar 6. PMID: 29508480.