

# Human Thyroid peroxidase / TPO Protein (257 Ser/Ala, 725 Pro/Thr, His Tag)

Catalog Number: 13194-H08B



Sino Biological  
Biological Solution Specialist

## General Information

### Gene Name Synonym:

MSA; TDH2A; TPX

### Protein Construction:

A DNA sequence encoding the human TPO (P07202-1) extracellular domain (Met 1-Arg846, 257 Ser/Ala, 725 Pro/Thr) was fused with a polyhistidine tag at the C-terminus.

**Source:** Human

**Expression Host:** Baculovirus-Insect Cells

## QC Testing

**Purity:** > 95 % as determined by SDS-PAGE

### Endotoxin:

< 1.0 EU per µg of the protein as determined by the LAL method

### Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

**Predicted N terminal:** Cys 15

### Molecular Mass:

The secreted recombinant human TPO comprises 842 amino acids and has a predicted molecular mass of 93.8 kDa. The apparent molecular mass of rh TPO (1-846) is approximately 90-100 kDa in SDS-PAGE under reducing conditions.

### Formulation:

Lyophilized from sterile 20mM Tris, 500mM NaCl, pH 7.4, 10% gly

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

## Usage Guide

### Storage:

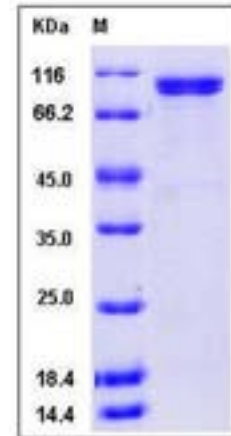
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

**Avoid repeated freeze-thaw cycles.**

### Reconstitution:

Detailed reconstitution instructions are sent along with the products.

## SDS-PAGE:



## Protein Description

Thyroid peroxidase is a membrane-bound glycoprotein which belongs to the peroxidase family, XPO subfamily. It contains 1 EGF-like domain and 1 Sushi (CCP/SCR) domain. Thyroid Peroxidase represents one of the main autoantigenic targets in autoimmune thyroid disease of humans. It used to be taken as the formerly so-called 'microsomal antigen' several years ago. As an integral membrane glycoprotein it is restricted to the apical plasma membrane of the follicular epithelial cells and comprises two identical subunits of approx 10<sup>5</sup> kDa molecular weight. Thyroid peroxidase is an enzyme expressed abundantly in the thyroid that liberates iodine for addition onto tyrosine residues on thyroglobulin for the production of thyroxine or triiodothyronine, thyroid hormones. Thyroid peroxidase plays a key role in the thyroid hormone biosynthesis by catalysing both the iodination of tyrosyl residues and the coupling of iodotyrosyl residues in thyroglobulin to form precursors of the thyroid hormones T4 and T3.

## References

1. McLachlan SM, *et al.* (2000) Autoimmune response to the thyroid in humans: thyroid peroxidase--the common autoantigenic denominator. *Int Rev Immunol.* 19(6):587-618.
2. Nagasaka A, *et al.* (1976) Effect of antithyroid agents 6-propyl-2-thiouracil and 1-methyl-2-mercaptoimidazole on human thyroid iodine peroxidase. *J Clin Endocrinol Metab.* 43(1): 152-8.
3. Kimura S, *et al.* (1987) Human thyroid peroxidase: complete cDNA and protein sequence, chromosome mapping, and identification of two alternately spliced mRNAs. *Proc Natl Acad.* 84(16):5555-9.

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