

Active Recombinant Human Thrombopoietin

Cat. No. THPO-82H Lot. No. (See product label)

SPECIFICATION

Product Overview	Recombinant Human Thrombopoietin (TPO) was expressed in modified <i>human 293 cells</i> .
Species	Human
Source	HEK293
Protein Length	22-353 aa
Description	Thrombopoietin (TPO), a hormone predominately expressed in liver and bone marrow stromal cells, is the principal regulator of proliferation and differentiation of megakaryocytes, and is the major cytokine involved in platelet production. TPO has also been shown to play a role in production of primitive pluripotent stem cells and progenitor cells, such as erythroid and myeloid progenitor cells. Human TPO cDNA encodes a 353 amino acid precursor protein that is cleaved upon secretion from the cell. Mature human TPO is a 95kDa glycoprotein that comprises two domains, a receptor binding domain that shares homology with erythropoietin, and a heavily O- and N-linked glycosylated region at the carboxy terminus.
Theoretical Sequence	SPAPPACDLRVLSK LLRDSHVLHSRLSQC PEVHPLPTPVLLPAVDF SLGEW KTQ MEE TKAQDILGAVTLLEG VMAARGQLGPTCLSSLLGQLSGQVRLLLGALQSLLG T QLPPQGRRTTAHKDPNAIFLSFQHLL RGKVRFLMLVGGSTLCVRRAPPTTAVPSRT S LVLT LN ELPNRTSGLLE NFTASARTGSGLLKWQQGFRAKIPGLLNQTSRSLDQIP G YLNRIHELN GTRGLFPGPSRRTL GAPDISSGTS DTGSLPPNLQPGYSPSPTHPP TG

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QYTLFPLPPTLPTPVVQLHPLLDPDSAPTPTPTSPDLLNTSYTHSQNLSQEG.

Molecular Mass

Thrombopoietin migrates as a broad band between 75 and 100 kDa in SDS-PAGE due to post-translation modifications, in particular glycosylation. This compares with unmodified Thrombopoietin that has a predicted molecular mass of 35.5 kDa.

PI

Thrombopoietin separates into a number of isoforms with a pI less than 5.0 in 2D PAGE due to post-translational modifications, in particular glycosylation. This compares with the unmodified Thrombopoietin that has a predicted pI of 9.69.

% Carbohydrate

Thrombopoietin consists of greater than 35% carbohydrate by weight.

Glycosylation

Thrombopoietin contains N- and O-linked oligosaccharides.

Purity

>95%, as determined by SDS-PAGE and visualized by silver stain.

Formulation

When reconstituted in 0.5 ml sterile phosphate-buffered saline, the solution will contain 1% human serum albumin (HSA) and 10% trehalose.

Reconstitution

It is recommended that 0.5 ml of sterile phosphate-buffered saline be added to the vial.

Storage

Lyophilized products should be stored at 2 to 8°C. Following reconstitution short-term storage at 4°C is recommended, and longer-term storage of aliquots at -18 to -20°C.

Activity

The ED₅₀ of TPO is typically 2.5 to 10 ng/ml as measured in a cell proliferation assay using the human growth factor dependent TF-1 cell line.

GENE INFORMATION

Gene Name

THPO thrombopoietin [Homo sapiens]

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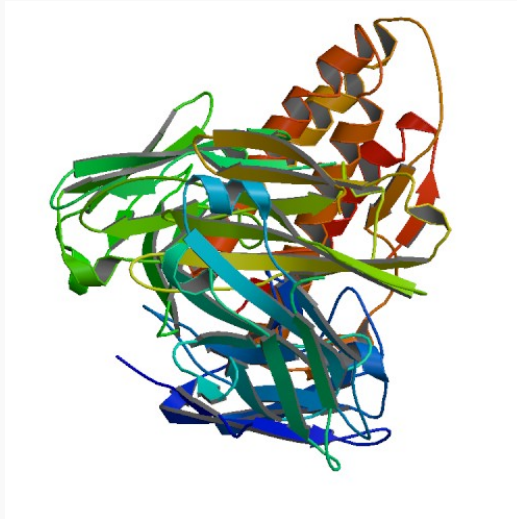
Synonyms	thrombopoietin nirs variant 1; megakaryocyte stimulating factor; MKCSF; c-mpl ligand; megakaryocyte colony-stimulating factor; MGDF; megakaryocyte growth and development factor; MPL ligand; myeloproliferative leukemia virus oncogene ligand; C-mpl ligand; Megakaryocyte colony-stimulating factor; Megakaryocyte growth and development factor; MGC163194; Myeloproliferative leukemia virus oncogene ligand; Thrombopoietin; ML; TPO; MPLLG; THPO
Gene ID	7066
mRNA Refseq	NM_000460
Protein Refseq	NP_000451
MIM	600044
UniProt ID	P40225
Chromosome Location	3q27
Pathway	Hematopoietic cell lineage
Function	cytokine activity; growth factor activity; hormone activity

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