Recombinant Human Thrombopoietin/TPO (His, Flag)

Information

Gene ID	7066
Accession #	P40225-1
Alternate Names	Megakaryocyte colony-stimulating factor; MGDFC-mpl ligand; MKCSF; THPO; Thrombopoietin; Tpo
Source	HEK293
Protein sequence	SPAPPACDLRVLSKLLRDSHVLHSRLSQCPEVHPLPTPVLLPAVDFSLGEWKTQMEETKAQDILGAVTLLLE GVMAARGQLGPTCLSSLLGQLSGQVRLLLGALQSLLGTQLPPQGRTTAHKDPNAIFLSFQHLLRGKVRFLM LVGGSTLCVRRAPPTTAVPSRTSLVLTLNELPNRTSGLLETNFTASARTTGSGLLKWQQGFRAKIPGLLNQT SRSLDQIPGYLNRIHELLNGTRGLFPGPSRRTLGAPDISSGTSDTGSLPPNLQPGYSPSPTHPPTGQYTLFP LPPTLPTPVVQLHPLLPDPSAPTPTPTSPLLNTSYTHSQNLSQEG
Tag	C-His, C-Flag
M.Wt	The protein has a calculated MW of 52.9 KDa.
Appearance	Solution protein.
Stability & Storage	Avoid repeated freeze-thaw cycles. It is recommended that the protein be aliquoted for optimal storage. -2 years from date of receipt, -20 to -70 °C as supplied.
Concentration	1 mg/mL
Formulation	Supplied as a 0.2 μm filtered solution in PBS, pH7.4.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. This solution can be diluted into other aqueous buffers.
Biological Activity	Testing in progress.
Shipping Condition	Shipping with dry ice.
Handling	Centrifuge the vial prior to opening.
Usage	For Research Use Only! Not to be used in humans.

Quality Control

Purity	> 95 % by SDS-PAGE.
Endotoxin	Less than 1.0 EU/μg as determined by LAL method.

Description

Thrombopoietin (Tpo) is a key regulator of megakaryopoiesis and thrombosis. It is mainly produced in the liver and is bound and internalized by the receptor Tpo R/c-mpl. Defects in the Tpo-Tpo-R signaling pathway have been implicated in a variety of platelet disorders. The 353-amino acid (aa) human Tpo precursor is cleaved to produce a 332-amino acid mature protein. Mature human Tpo has approximately 70% aa sequence homology with mouse and rat Tpo. It is an 80-85 kDa protein consisting of an N-terminal domain homologous to erythropoietin (Epoietin) and a C-terminal domain containing multiple N-linked and O-linked glycosylation sites. Tissue-specific alternating splicing of human Tpo yields multiple isoforms with internal deletions, insertions, and/or C-terminal substitutions. Tpo promotes the differentiation, proliferation, and maturation of MK and its progenitor cells. Several other cytokines can also promote these functions, but only synergistically with Tpo. Notably, IL-3 independently induces MK development, although its effects are limited to the early stages of the

MK lineage. TPO also promotes platelet production, aggregation, ECM adhesion, and activation. Following Arg191 within the C-terminal domain, it is cleaved by platelet-derived thrombin and subsequently cleaved at other sites upon extended digestion. Full-length Tpo and shorter forms are circulated in the plasma. A C-terminal domain is not required for binding Tpo R or inducing MK growth and differentiation.

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