



Anti-THPO monoclonal antibody, clone 489230 (DCABY-4069)

This product is for research use only and is not intended for diagnostic use.

PRODUCT INFORMATION

Antigen Description

Thrombopoietin (Tpo), is a key regulator of megakaryocytopoiesis and thrombopoiesis. It is principally produced in the liver and is bound and internalized by the receptor Tpo R/c-mpl. Defects in the Tpo-Tpo R signaling pathway are associated with a variety of platelet disorders. The 353 amino acid (aa) human Tpo precursor is cleaved to yield the 332 aa mature protein. Mature human Tpo shares approximately 70% aa sequence homology with mouse and rat Tpo. It is an 80 - 85 kDa protein that consists of an N-terminal domain with homology to Erythropoietin (Epo) and a C-terminal domain that contains multiple N-linked and O-linked glycosylation sites. Tissue specific alternate splicing of human Tpo generates multiple isoforms with internal deletions, insertions, and/or C-terminal substitutions. Tpo promotes the differentiation, proliferation, and maturation of MK and their progenitors. Several other cytokines can promote these functions as well but only in cooperation with Tpo. Notably, IL-3 independently induces MK development, although its effects are restricted to early in the MK lineage. Tpo additionally promotes platelet production, aggregation, ECM adhesion, and activation. It is cleaved by platelet-derived thrombin following Arg191 within the C-terminal domain and subsequently at other sites upon extended digestion. Full length Tpo and shorter forms circulate in the plasma. The C-terminal domain is not required for binding to Tpo R or inducing MK growth and differentiation. Aside from its hematopoietic effects, Tpo is expressed in the brain where it promotes the apoptosis of hypoxia-sensitized neurons and inhibits neuronal differentiation by blocking NGF induced signaling. Thrombopoietin receptor (Tpo R), also known as myeloproliferative leukemia protein (c-Mpl), is a type I transmembrane protein that is a member of the hematopoietin/cytokine receptor superfamily. As a consequence of alternative splicing, there are four identified mRNA variants. The functional receptor is encoded by the P isoform of mRNA. The human and mouse receptors share approximately 81% amino acid sequence identity. Tpo R is expressed at low levels in various cell types, including hematopoietic progenitor cells, megakaryocytes and platelets.

Specificity

Detects mouse Thrombopoietin/Tpo in ELISAs and Western blots. In sandwich immunoassays, 0.65% cross-reactivity with NS0-derived recombinant human (rh)Tpo is observed. No significant cross-reactivity or interference with rhEPO, recombinant mouse (rm) G-CSF, rmGM-CSF, rmM-

CSF, rmSCF, rmTpo R, or rmVEGF is observed.

Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse Thrombopoietin/Tpo. Ser22-Thr356 (predicted) Accession Number P40226
Isotype	IgG2a
Source/Host	Rat
Species Reactivity	Mouse
Clone	489230
Purification	Protein A or G purified from hybridoma culture supernatant
Conjugate	Unconjugated
Applications	Western Blot, ELISA Capture (Matched Pair)
Format	Liquid
Size	1 mg
Buffer	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose.
Preservative	None
Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. 12 months from date of receipt, -20 to -70 °C as supplied. 1 month, 2 to 8 °C under sterile conditions after reconstitution. 6 months, -20 to -70 °C under sterile conditions after reconstitution.

GENE INFORMATION

Gene Name	Thpo thrombopoietin [Mus musculus (house mouse)]
Official Symbol	THPO
Synonyms	THPO; thrombopoietin; Ml; Tpo; Mgdf; Mpllg; C-mpl ligand; megakaryocyte colony-stimulating factor; megakaryocyte growth and development factor; myeloproliferative leukemia virus oncogene ligand;
Entrez Gene ID	21832
Protein Refseq	NP_001166976
UniProt ID	P40226

Chromosome Location	16 B1; 16 12.51 cM
Pathway	Hematopoietic cell lineage; Hemostasis; Platelet Aggregation (Plug Formation); Platelet activation, signaling and aggregation;
Function	cytokine activity; hormone activity; receptor binding;