

TPO (F-3): sc-374045

BACKGROUND

Thrombopoietin (TPO or THPO), also known as c-Mpl ligand (c-Mpl L), is a cytokine that plays a central role in megakaryopoiesis by influencing the development and maturation of megakaryocytes and platelet production. TPO is expressed by both mature and progenitor megakaryocytes, as well as by human platelets. Human TPO cDNA encodes a 332 amino acid precursor with a 21 amino acid signal peptide which is cleaved to generate the mature protein. TPO isolated from serum ranges in molecular weight, which suggests that the protein is highly glycosylated. TPO exerts its biological effects through the TPO receptor, c-Mpl. Stimulation of c-Mpl with TPO results in the activation of the Janus tyrosine kinase family members, Tyk 2 and JAK2 which in turn phosphorylate Stat5 and Stat3, causing their nuclear translocation and the transcription of Stat responsive genes. The gene encoding TPO maps to human chromosome 3q27.1.

REFERENCES

1. Foster, D.C., et al. 1994. Human thrombopoietin: gene structure, cDNA sequence, expression, and chromosomal localization. *Proc. Nat. Acad. Sci. USA* 91: 13023-13027.
2. Dorsch, M., et al. 1995. TPO and IL-3 induce overlapping but distinct protein tyrosine phosphorylation in a myeloid precursor cell line. *Biochem. Biophys. Res. Commun.* 214: 424-431.
3. Sasaki, K., et al. 1995. TPO/c-Mpl ligand induces tyrosine phosphorylation of multiple cellular proteins including proto-oncogene products, Vav and c-Cbl, and Ras signaling molecules. *Biochem. Biophys. Res. Commun.* 216: 338-347.

CHROMOSOMAL LOCATION

Genetic locus: THPO (human) mapping to 3q27.1; Thpo (mouse) mapping to 16 B1.

SOURCE

TPO (F-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 29-52 at the N-terminus of TPO of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

TPO (F-3) is available conjugated to agarose (sc-374045 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374045 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374045 PE), fluorescein (sc-374045 FITC), Alexa Fluor[®] 488 (sc-374045 AF488), Alexa Fluor[®] 546 (sc-374045 AF546), Alexa Fluor[®] 594 (sc-374045 AF594) or Alexa Fluor[®] 647 (sc-374045 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-374045 AF680) or Alexa Fluor[®] 790 (sc-374045 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-374045 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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APPLICATIONS

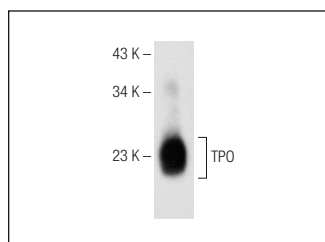
TPO (F-3) is recommended for detection of precursor and mature TPO of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

TPO (F-3) is also recommended for detection of precursor and mature TPO in additional species, including porcine.

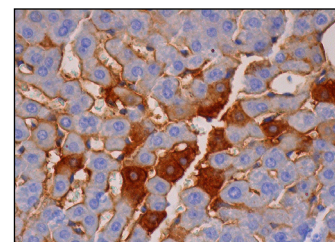
Suitable for use as control antibody for TPO siRNA (h): sc-39807, TPO siRNA (m): sc-39808, TPO shRNA Plasmid (h): sc-39807-SH, TPO shRNA Plasmid (m): sc-39808-SH, TPO shRNA (h) Lentiviral Particles: sc-39807-V and TPO shRNA (m) Lentiviral Particles: sc-39808-V.

Molecular Weight of TPO: 70 kDa.

DATA



TPO (F-3): sc-374045. Western blot analysis of mouse recombinant TPO.



TPO (F-3): sc-374045. Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing membrane and cytoplasmic staining of hepatocytes.

SELECT PRODUCT CITATIONS

1. Zou, Z., et al. 2020. Endogenous thrombopoietin promotes non-small-cell lung carcinoma cell proliferation and migration by regulating EGFR signalling. *J. Cell. Mol. Med.* 24: 6644-6657.
2. Geysels, R.C., et al. 2021. The transcription factor NFκB mediates thyrotropin-stimulated expression of thyroid differentiation markers. *Thyroid* 31: 299-314.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.