SANTA CRUZ BIOTECHNOLOGY, INC.

TPO (A-6): sc-514326

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.
4. Kaushansky, K. 1995. Thrombopoietin: the primary regulator of platelet production. Blood 86: 419-431.
5. Chen, J., et al. 1995. Regulation of platelet activation *in vitro* by the c-Mpl ligand, thrombopoietin. Blood 86: 4054-4062.
6. Mu, S.X., et al. 1995. Megakaryocyte growth and development factor and interleukin-3 induce patterns of protein-tyrosine phosphorylation that correlate with dominant differentiation over proliferation of mpl-transfected 32D cells. Blood 86: 4532-4543.
7. Bacon, C.M., et al. 1995. Thrombopoietin (TPO) induces tyrosine phosphorylation and activation of STAT5 and STAT3. FEBS Lett. 370: 63-68.

CHROMOSOMAL LOCATION

Genetic locus: Thpo (mouse) mapping to 16 B1.

SOURCE

TPO (A-6) is a mouse monoclonal antibody raised against amino acids 22-89 mapping near the N-terminus of TPO of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

TPO (A-6) is recommended for detection of TPO of mouse origin by Western Blotting (starting dilution 1:100, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

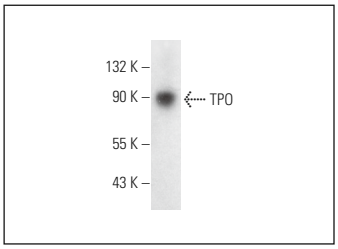
Suitable for use as control antibody for TPO siRNA (m): sc-39808, TPO shRNA Plasmid (m): sc-39808-SH and TPO shRNA (m) Lentiviral Particles: sc-39808-V.

Molecular Weight of TPO: 70 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



TPO (A-6): sc-514326. Western blot analysis of mouse recombinant TPO.

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.