

## c-Mpl (E-7): sc-377417



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 from hematopoietic stem cells. TPO exerts its biological effects through the TPO receptor, c-Mpl. c-Mpl is a member of the cytokine receptor superfamily, and its expression is restricted to hematopoietic tissues and cells, such as bone marrow, spleen, fetal liver and CD34<sup>+</sup> cells. 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. Mutations in c-Mpl have been implicated as the cause of certain human disorders, including congenital amegakaryocytic thrombocytopenia (CAMT) and thrombocytopenia with absent radii (TAR) syndrome.

## REFERENCES

1. 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.
2. Chen, J., et al. 1995. Regulation of platelet activation *in vitro* by the c-Mpl ligand, thrombopoietin. *Blood* 86: 4054-4062.
3. Bacon, C.M., et al. 1995. Thrombopoietin (TPO) induces tyrosine phosphorylation and activation of Stat5 and Stat3. *FEBS Lett.* 370: 63-68.
4. Ezumi, Y., et al. 1995. Thrombopoietin, c-Mpl ligand, induces tyrosine phosphorylation of Tyk2, JAK2, and Stat3, and enhances agonists-induced aggregation in platelets *in vitro*. *FEBS Lett.* 374: 48-52.
5. Ballmaier, M., et al. 1998. Defective c-Mpl signaling in the syndrome of thrombocytopenia with absent radii. *Stem Cells* 16: 177-184.
6. Luoh, S., et al. 2000. Role of the distal half of the c-Mpl intracellular domain in control of platelet production by thrombopoietin *in vivo*. *Mol. Cell. Biol.* 20: 507-515.
7. Tonelli, R., et al. 2000. Compound heterozygosity for two different amino-acid substitution mutations in the thrombopoietin receptor (c-Mpl gene) in congenital amegakaryocytic thrombocytopenia. *Hum. Genet.* 107: 225-233.

## CHROMOSOMAL LOCATION

Genetic locus: MPL (human) mapping to 1p34.2; Mpl (mouse) mapping to 4 D2.1.

## SOURCE

c-Mpl (E-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 531-569 near the C-terminus of c-Mpl of human origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-377417 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

c-Mpl (E-7) is recommended for detection of c-Mpl of mouse, rat and human 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 c-Mpl siRNA (h): sc-29853, c-Mpl siRNA (m): sc-29854, c-Mpl shRNA Plasmid (h): sc-29853-SH, c-Mpl shRNA Plasmid (m): sc-29854-SH, c-Mpl shRNA (h) Lentiviral Particles: sc-29853-V and c-Mpl shRNA (m) Lentiviral Particles: sc-29854-V.

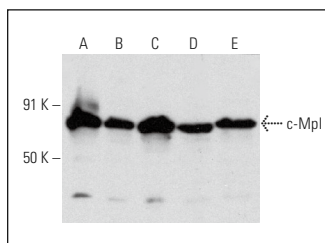
Molecular Weight of c-Mpl: 71 kDa.

Positive Controls: M1 whole cell lysate: sc-364782, Ramos cell lysate: sc-2216 or U266 whole cell lysate: sc-364800.

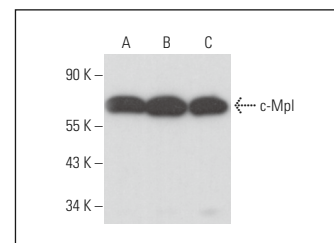
## RECOMMENDED SUPPORT REAGENTS

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 L-Agarose: sc-2336 (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



c-Mpl (E-7): sc-377417. Western blot analysis of c-Mpl expression in Ramos (A), Daudi (B), U266 (C), LADMAC (D) and M1 (E) whole cell lysates.



c-Mpl (E-7): sc-377417. Western blot analysis of c-Mpl expression in U266 (A), Daudi (B) and Raji (C) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.

## SELECT PRODUCT CITATIONS

1. Harada, K., et al. 2017. Thrombopoietin contributes to the formation and the maintenance of hematopoietic progenitor-containing cell clusters in the aorta-gonad-mesonephros region. *Cytokine* 95: 35-42.

## 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.