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MPL Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1659a

Product Information

Application	WB, FC, E
Primary Accession	P40238
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Clone Names	1H2
Isotype	IgG2b
Calculated MW	71245
Description	In 1990 an oncogene, v-mpl, was identified from the murine myeloproliferative leukemia virus that was capable of immortalizing bone marrow hematopoietic cells from different lineages. In 1992 the human homologue, named, c-mpl, was cloned. Sequence data revealed that c-mpl encoded a protein that was homologous with members of the hematopoietic receptor superfamily. Presence of anti-sense oligodeoxynucleotides of c-mpl inhibited megakaryocyte colony formation. The ligand for c-mpl, thrombopoietin, was cloned in 1994. Thrombopoietin was shown to be the major regulator of megakaryocytopoiesis and platelet formation. The protein encoded by the c-mpl gene, CD110, is a 635 amino acid transmembrane domain, with two extracellular cytokine receptor domains and two intracellular cytokine receptor box motifs . TPO-R deficient mice were severely thrombocytopenic, emphasizing the important role of CD110 and thrombopoietin in megakaryocyte and platelet formation. Upon binding of thrombopoietin CD110 is dimerized and the JAK family of non-receptor tyrosine kinases, as well as the STAT family, the MAPK family, the adaptor protein Shc and the receptors themselves become tyrosine phosphorylated.
Immunogen	Purified recombinant fragment of human MPL expressed in E. Coli.
Formulation	Purified antibody in PBS with 0.05% sodium azide

Additional Information

Gene ID	4352
Other Names	Thrombopoietin receptor, TPO-R, Myeloproliferative leukemia protein, Proto-oncogene c-Mpl, CD110, MPL, TPOR
Dilution	WB~~1/500 - 1/2000 FC~~1/200 - 1/400 E~~1/10000
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions	MPL Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	MPL
Synonyms	TPOR
Function	Receptor for thrombopoietin that regulates hematopoietic stem cell renewal, megakaryocyte differentiation, and platelet formation. Upon activation by THPO, induces rapid tyrosine phosphorylation and activation of JAK2, providing docking sites for many signaling proteins such as STAT5, SHIP/INPP5D, GRB2, SOS1 and PI3K (PubMed:15899890, PubMed:37633268). In turn, These signaling cascades lead to the proliferation, survival, and differentiation of megakaryocytes, ultimately leading to increased platelet production.
Cellular Location	Cell membrane; Single-pass type I membrane protein. Golgi apparatus Cell surface
Tissue Location	Expressed at a low level in a large number of cells of hematopoietic origin. Isoform 1 and isoform 2 are always found to be coexpressed

References

Cancer Res. 2009 Apr 15;69(8):3681-8. J Biol Chem. 2009 May 1;284(18):11781-91.

Images

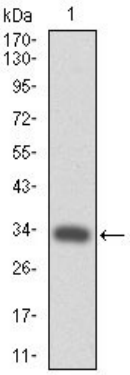

Figure 1: Western blot analysis using MPL mAb against human MPL (AA: 307-362) recombinant protein. (Expected MW is 32.2 kDa)

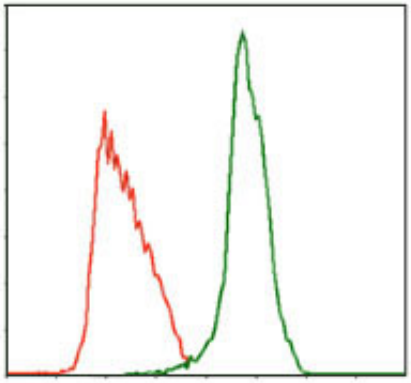

Figure 2: Flow cytometric analysis of MOLT4 cells using MPL mouse mAb (green) and negative control (red).