Mouse/Rat Thrombopoietin/Tpo Antibody

Antigen Affinity-purified Polyclonal Goat IgG

Catalog Number: AF-488-NA

DESCRIPTION

Species Reactivity	Mouse/Rat
Specificity	Detects mouse and rat Thrombopoietin/Tpo in direct ELISAs. Neutralizes the biological activity of recombinant mouse Thrombopoietin/Tpo. It will also neutralize the activity of recombinant human (rh) Thrombopoietin/Tpo, although 25 times the amount of Ig is required. In direct ELISAs less than 15% cross-reactivity with rhTpo is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse Thrombopoietin/Tpo and *S. frugiperda* insect ovarian cell line *Sf* 21-derived recombinant mouse Thrombopoietin/Tpo
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

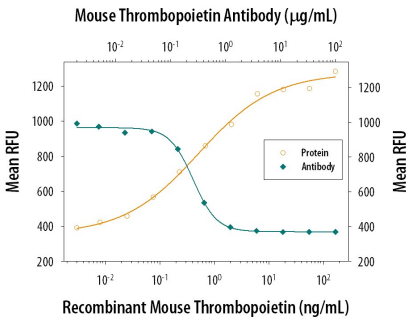
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	0.1 µg/mL	Recombinant Mouse Thrombopoietin/Tpo (Catalog # 488-TO)
Neutralization	Measured by its ability to neutralize Thrombopoietin/Tpo-induced proliferation in the MO7e human megakaryocytic leukemic cell line. Avanzi, G. *et al.* (1988) Br. J. Haematol. **69**:359. The Neutralization Dose (ND_{50}) is typically 0.1–0.3 µg/mL in the presence of 3 ng/mL Recombinant Mouse Thrombopoietin/Tpo.	

DATA

Neutralization



Cell Proliferation Induced by Thrombopoietin/Tpo and Neutralization by Mouse Thrombopoietin/Tpo Antibody. Recombinant Mouse Thrombopoietin/Tpo (Catalog # 488-TO) stimulates proliferation in the MO7e human megakaryocytic leukemic cell line in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Mouse Thrombopoietin/Tpo (3 ng/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Mouse/Rat Thrombopoietin/Tpo Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-488-NA). The ND_{50} is typically 0.1-0.3 µg/mL.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & 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.

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BACKGROUND

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 (1-3). The 356 amino acid (aa) mouse Tpo precursor is cleaved to yield the 335 aa mature protein. Mature mouse Tpo shares 71% and 81% aa sequence homology with human and rat Tpo, respectively. 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 (4, 5). Tissue specific alternate splicing of mouse Tpo generates multiple isoforms with internal deletions, insertions, and/or C-terminal substitutions (6). Tpo promotes the differentiation, proliferation, and maturation of MK and their progenitors (4, 5, 7). Several other cytokines can promote these functions as well but only in cooperation with Tpo (8, 9). Notably, IL-3 independently induces MK development, although its effects are restricted to early in the MK lineage (8, 9). Tpo additionally promotes platelet production, aggregation, ECM adhesion, and activation (10 - 13). It is cleaved by platelet-derived thrombin following Arg191 within the C-terminal domain and subsequently at other sites upon extended digestion (14). Full length Tpo and shorter forms circulate in the plasma (4, 5). The C-terminal domain is not required for binding to Tpo R or inducing MK growth and differentiation (5). 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 (15, 16).

References:

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