Human Thrombopoietin/Tpo Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF-288-NA

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Tpo in direct ELISAs and Western blots. In direct ELISAs and Western blots, less than 15% cross-reactivity with recombinant mouse Tpo is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	*S. frugiperda* insect ovarian cell line *Sf* 21-derived recombinant human Tpo Ser22-Gly353 Accession # P40225
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.

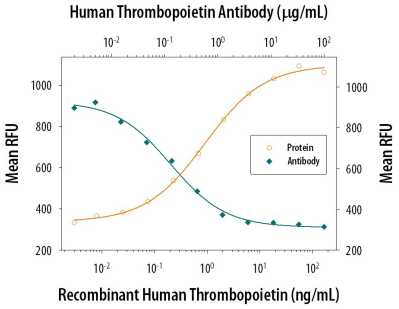
APPLICATIONS

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 Human Thrombopoietin/Tpo (Catalog # 288-TP)
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 0.05-0.3 µg/mL in the presence of 3 ng/mL Recombinant Human Thrombopoietin/Tpo.	

DATA

Neutralization



Cell Proliferation Induced by Thrombopoietin and Neutralization by Human Thrombopoietin Antibody. Recombinant Human Thrombopoietin/Tpo (Catalog # 288-TP) stimulates proliferation in the MO7e human megakaryocytic leukemic cell line in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Human Thrombopoietin/Tpo (3 ng/mL) is neutralized (green line) by increasing concentrations of Human Thrombopoietin/Tpo Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-288-NA). The ND_{50} is typically 0.05-0.3 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.
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 from date of receipt, 2 to 8 °C, reconstituted. ● 6 months from date of receipt, -20 to -70 °C, reconstituted.

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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 353 amino acid (aa) human Tpo precursor is cleaved to yield the 332 aa mature protein. Mature human Tpo shares approximately 70% aa sequence homology with mouse and rat Tpo. 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 human 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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