

DESCRIPTION

Source Mouse myeloma cell line, NS0-derived
Ser22-Thr356
Accession # P40226

N-terminal Sequence Analysis Ser22

Predicted Molecular Mass 35 kDa

SPECIFICATIONS

SDS-PAGE 80-90 kDa, reducing conditions

Activity Measured in a cell proliferation assay using MO7e human megakaryocytic leukemic cells. Avanzi, G. *et al.* (1988) Br. J. Haematol. **69**:359. The ED₅₀ for this effect is typically 0.4-2.4 ng/mL.

Endotoxin Level <0.10 EU per 1 µg of the protein by the LAL method.

Purity >97%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 50 µg/mL in sterile PBS.

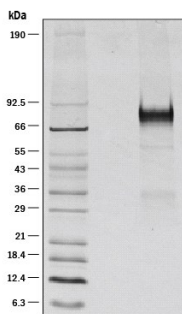
Shipping The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

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, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

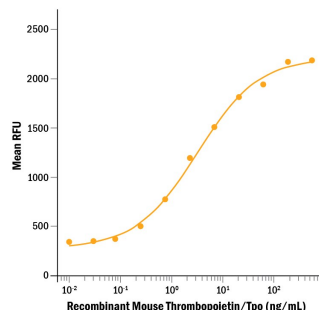
DATA

SDS-PAGE



1 µg/lane of Recombinant Mouse Thrombopoietin/Tpo was resolved with SDS-PAGE under reducing (R) conditions and visualized by silver staining, showing a band at 80-90 kDa.

Bioactivity



Recombinant Mouse Thrombopoietin/Tpo (Catalog # 488-TO/CF) stimulates cell proliferation in the MO7e human megakaryocytic leukemic cell line. The ED₅₀ for this effect is typically 0.4-2.4 ng/mL.

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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