Leader in Biomolecular Solutions for Life Science

www.abclonal.com

Recombinant Rat Thrombopoietin /THPO / TPO Protein

Catalog No.: RP01901 Recombinant

Sequence Information

Species	Gene ID	Swiss Prot
Rat	81811	P49745

Tags
C-His

Synonyms
Megakaryocyte colony-stimulating factor; Megakaryocyte growth and development factor; megakaryocyte stimulating factor; MGDF; MGDFC-mpl ligand; MKCSF; MK-CSF; ML; MPL ligand; MPLLG; MPLLGMGC163194; Myeloproliferative leukemia virus oncogene ligand; THCYT1; THPO; thrombopoietin nirs variant 1; Thrombopoietin; Tpo; TPOMKCSF

Product Information

Source	Purification
HEK293 cells	≥ 95% as determined by SDS-PAGE.

Calculated MW	Observed MW
33.10 kDa	50-70 kDa

Endotoxin
< 0.01 EU/μg of the protein by LAL method

Formulation
Lyophilized from a 0.22 μm filtered solution of PBS, pH 7.4.

Reconstitution
Centrifuge the vial before opening. Reconstitute to a concentration of 0.1-0.5 mg/mL in sterile distilled water. Avoid vortex or vigorously pipetting the protein. For long term storage, it is recommended to add a carrier protein or stablizer (e.g. 0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose), and aliquot the reconstituted protein solution to minimize free-thaw cycles.

Contact

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 . Mature rat Tpo shares 68% and 81% aa sequence homology with human and mouse 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. Tpo promotes the differentiation, proliferation, and maturation of megakaryocytes (MK) and their progenitors . Several other cytokines can also promote these functions but only in cooperation with Tpo . Notably, IL□3 independently induces MK development, although its effects are restricted to early in the MK lineage . Tpo additionally promotes platelet production, aggregation, ECM adhesion, and activation . These actions, in combination with direct effects on cardiomyocytes, can aid in the recovery of heart function following myocardial infarction . Tpo is cleaved by platelet□derived thrombin following Arg191 within the C□terminal domain and subsequently at other sites upon extended digestion . The C□terminal domain is not required for binding to Tpo R or inducing MK growth and differentiation . 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 .

Basic Information

Description
Recombinant Rat THPO / TPO / Thrombopoietin Protein is produced by HEK293 cells expression system. The target protein is expressed with sequence (Ser22-Ser326) of Rat THPO / TPO / Thrombopoietin (Accession #NP_112395.1) fused with a His tag at the C-terminus.

Bio-Activity
Measured in a cell proliferation assay using M07e human megakaryocytic leukemic cells. The ED50 for this effect is 0.26-1.02 ng/mL, corresponding to a specific activity of 9.8×10^{5}~3.8×10^{6} units/mg.

Shipping
Lyophilized proteins are shipped at ambient temperature.
Liquid proteins are shipped at frozen temperature with dry ice.
Upon receipt, store it immediately at the temperature recommended below.

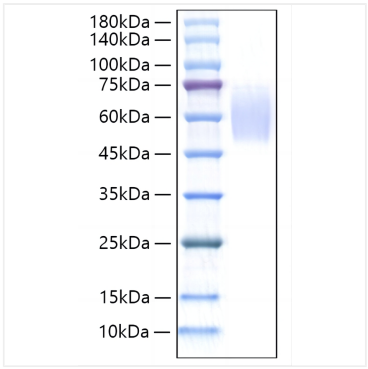
Storage
Store at -20℃.Store the lyophilized protein at -20℃ to -80 ℃ up to 1 year from the date of receipt.
After reconstitution, the protein solution is stable at -20℃ for 3 months, at 2-8℃ for up to 1 week.
Avoid repeated freeze/thaw cycles.

Operational Notes
For your safety and health, please wear a lab coat and disposable gloves for handling.

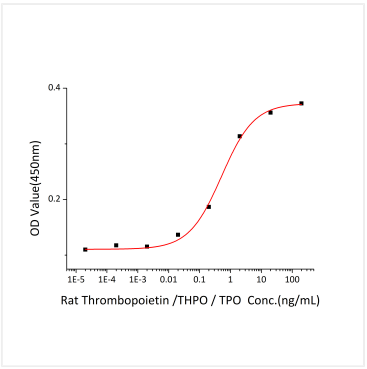
400-999-6126
cn.market@abclonal.com.cn
www.abclonal.com.cn

* 为了您的安全和健康，请穿实验服并戴一次性手套操作。

Validation Data



Recombinant Rat Thrombopoietin /THPO / TPO Protein was determined by SDS-PAGE under reducing conditions with Coomassie Blue.



Recombinant Rat Thrombopoietin /THPO / TPO Protein promote the proliferation of M07e human megakaryocytic leukemic cells. The ED50 for this effect is 0.26-1.02 ng/mL, corresponding to a specific activity of 9.8×10^{5}~3.8×10^{6} units/mg.