Epoto Biotech

南京艾璞拓生物科技有限公司

Recombinant Human Thrombopoietin, Tag Free

Catalog Number: HF-2001

General Information

Synonyms	Megakaryocyte colony-stimulating factor ; MGDFC-mpl ligand; MKCSF; THPO; Thrombopoietin; Tpo
Accession #	P40225
Source	Human embryonic kidney cell, HEK293-derived human Thrombopoietin/Tpo protein
	Ser22-Gly353
Predicted Moleucular weight	52.9 kDa

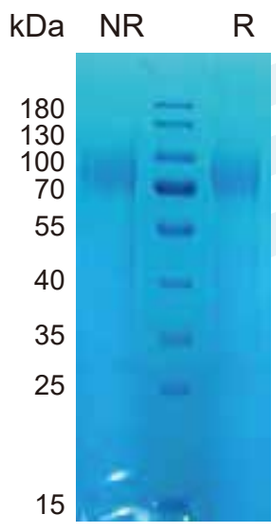
Components and Storage

Formulation	Solution protein.
	Dissolved in sterile PBS buffer.
	This solution can be diluted into other aqueous buffers. Centrifuge the vial prior to opening.
Storage and Stability	Avoid repeated freeze-thaw cycles.
	It is recommended that the protein be aliquoted for optimal storage.
	12 months from date of receipt, -20 to -70 °C as supplied.
Shipping	Shipping with dry ice.

Quality

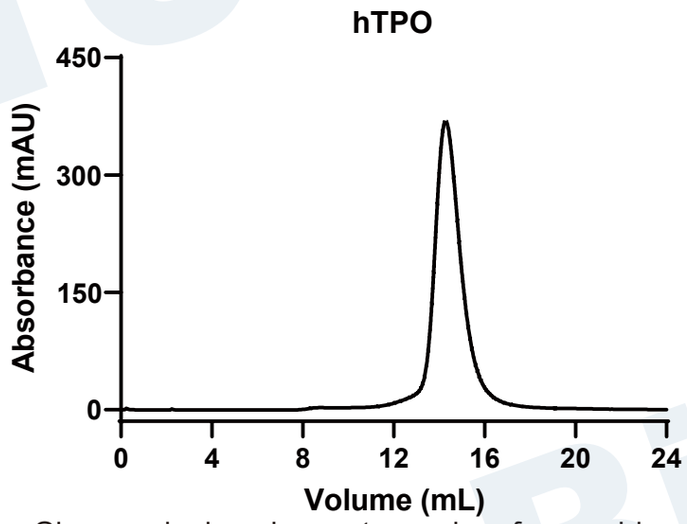
Purity	> 95%, determined by SDS-PAGE.
Endotoxin Level	<0.010 EU per 1 ug of the protein by the LAL method.
Activity	Measured in a cell proliferation assay using MO7e human megakaryocytic leukemic cells.
	The EC50 for this effect is 0.3-2 ng/mL.

SDS-PAGE



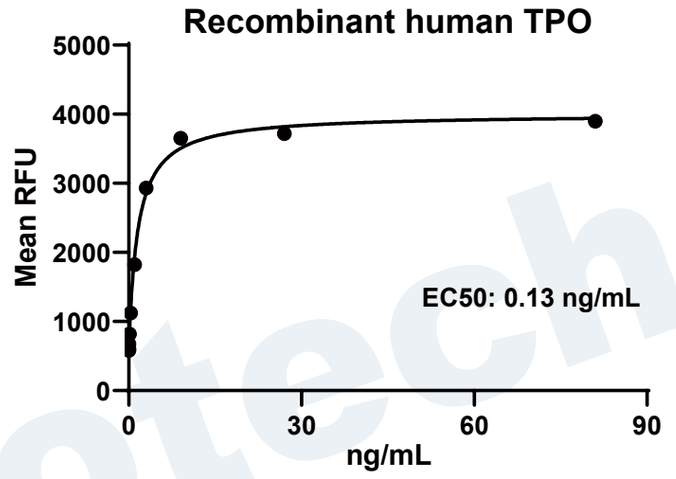
3 ug/lane protein was resolved with SDS-PAGE under non-reducing (NR) and reducing (R) conditions and visualized by Coomassie Blue staining.

Gel filtration



Size-exclusion chromatography of recombinant human Thrombopoietin protein (280 nm absorbance)

Bioactivity



Recombinant human Thrombopoietin (Catalog # HF-2001) stimulates cell proliferation of the MO7e human megakaryocytic leukemic cells.

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).

Reference

1. Deutsch, V.R. and A. Tomer (2006) Br. J. Haematol. 134:453.
2. Kaushansky, K. (2005) J. Clin. Invest. 115:3339.
3. Li, J. et al. (1999) Br. J. Haematol. 106:345.
4. Bartley, T.D. et al. (1994) Cell 77:1117.
5. de Sauvage, F.J. et al. (1994) Nature 369:533.
6. Marcucci, R. and M. Romano (2008) Biochim. Biophys. Acta 1782:427.
7. Kaushansky, K. et al. (1994) Nature 369:568.
8. Kaushansky, K. et al. (1995) Proc. Natl. Acad. Sci. 92:3234.
9. Broudy, V.C. et al. (1995), Blood 85:1719.
10. Lok, S.I. et al. (1994) Nature 369:565.
11. Chen, J. et al. (1995) Blood 86:4054.
12. Oda, A. et al. (1996) Blood 87:4664.
13. Van Os, E. et al. (2003) Br. J. Haematol. 121:482.
14. Kato, T. et al. (1997) Proc. Natl. Acad. Sci. 94:4669.

Contact us

艾璞拓生物 EPOTO BIOTECH

Global www.epotobiotech.com service@epotobiotech.com

China No.10 Xinghuo Road, Pukou District, Nanjing China TEL:+86 18652072210