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Product Information

Thrombopoietin, human
recombinant, expressed in *E. coli*

Catalog Number **T1568**
Storage Temperature –20 °C

Synonyms: c-MPL ligand, Megakaryocyte colony-stimulating factor, MGDF, TPO

Product Description

Recombinant Human Thrombopoietin (TPO), the ligand for the receptor encoded by the *c-Mpl* proto-oncogene, is a primary regulatory factor of megakaryocytopoiesis and thrombopoiesis *in vitro* and *in vivo*.[1-4] Thrombopoietin is produced from a DNA sequence encoding the mature human thrombopoietin protein.[4] Human and murine TPO exhibit cross-species reactivity.

Thrombopoietin (TPO) is a highly conserved glycoprotein. It is a lineage specific growth factor produced in the liver, kidney, and skeletal muscle. TPO stimulates the proliferation and maturation of megakaryocytes and promotes increased circulating levels of platelets *in vivo*. TPO signals through the c-mpl receptor and acts as an important regulator of circulating platelets. TPO binds to its receptor, *c-Mpl* proto-oncogene product, at two distinct sites, initiating receptor dimerization and activation.[5] Analysis of *c-Mpl* proto-oncogene mRNA indicates the existence of a novel truncated and potentially soluble form of TPO receptor. TPO receptors are found on megakaryocytes, their precursors, and platelets.

This recombinant, human TPO product is a fully biologically active 174 amino acid polypeptide (18.6 kDa), which contains the erythropoietin-like domain of the full length TPO protein. It is supplied as ~5 μg of protein lyophilized from a 0.1 % TFA solution containing 250 μg bovine serum albumin.

The biological activity of this recombinant product is measured in a cell proliferation assay using human MO7e cells.[6]

Purity: ≥98% (SDS -PAGE and HPLC)

Endotoxin: <0.1 ng/μg (1 EU/ μg)

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Reconstitute the contents of the vial using 10 mM sodium citrate, pH 3.0, to a concentration of less than 0.5 mg/mL. This solution can then be diluted into other aqueous buffers. Reconstituted product may be stored at 2–8 °C for up to one week. For extended storage, freeze in working aliquots.

Storage/Stability

Prior to reconstitution, store at –20 °C. Reconstituted product may be stored at 2–8 °C for up to one week. For prolonged storage, freeze in working aliquots. Avoid repeated freezing and thawing. Do not store in frostfree freezer.

References

1. Lok, S., and Foster, D.C., The structure, biology, and potential therapeutic applications of recombinant thrombopoietin. Stem Cells, **12**, 586-598 (1994).
2. Kato, T., et al., Native thrombopoietin: structure and function. Stem Cells, **16 (suppl. 2)**, 11-19 (1998).
3. Kuter, D., et al., eds., Thrombopoiesis and Thrombopoietins, Humana Press (Totowa, N.J.: 1997).
4. Foster, D., et al., Human thrombopoietin: gene structure, cDNA sequence, expression, and chromosomal localization. Proc. Natl. Acad. Sci., **91**, 13023-13027 (1994).
5. Hou, J., and Zhan, H., Expression of active thrombopoietin and identification of its key residues responsible for receptor binding. Cytokine, **10**, 319-330 (1998).
6. Avanzi, G., et al., Selective growth response to IL-3 of human leukemic cell line with megakaryoblastic features. Br. J. Haematol., **69**, 359-366 (1988).

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