Animal-Free™ Recombinant Human Thrombopoietin/Tpo

Catalog Number: BT-TPO-AFL

DESCRIPTION

Source	*E. coli*-derived human Thrombopoietin/Tpo protein Ser22-Leu195 Accession # NP_000451.1 Produced using non-animal reagents in an animal-free laboratory.
N-terminal Sequence Analysis	Ala-Ser22
Predicted Molecular Mass	19 kDa

SPECIFICATIONS

SDS-PAGE	18-19 kDa, under 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 ED_{50} for this effect is 0.050-0.500 ng/mL. The specific activity of Recombinant Human Thrombopoietin is >1 x 10^7 units/mg, which is calibrated against the human Thrombopoietin reference standard (NIBSC code: 03/124).
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE with quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in Acetonitrile and TFA with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in water.
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.

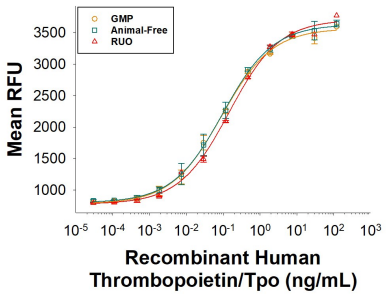
Bio-Techne®
Global | bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL: 1.612.379.2956
USA | TEL: 800.343.7475 Canada | TEL: 855.668.8722 Europe | Middle East | Africa TEL: +44.0.1235.529449
China | info.cn@bio-techne.com TEL: 400.821.3475

Animal-Free™ Recombinant Human Thrombopoietin/Tpo

Catalog Number: BT-TPO-AFL

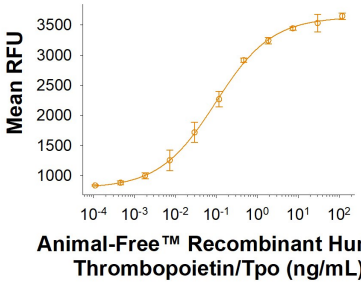
DATA

Bioactivity



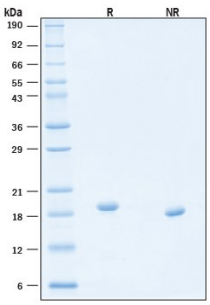
Equivalent Bioactivity of GMP, Animal-Free, and RUO grades of Recombinant Human Thrombopoietin/Tpo proteins. Equivalent bioactivity of GMP (Catalog # BT-TPO-GMP), Animal-Free (Catalog # BT-TPO-AFL) and RUO (Catalog # BT-TPO) grades of Recombinant Human Thrombopoietin/Tpo proteins as measured in a cell proliferation assay using MO7e human megakaryocytic leukemic cells (orange, green, red, respectively).

Bioactivity



Animal-Free™ Recombinant Human Thrombopoietin/Tpo Protein Bioactivity. Animal-Free™ Recombinant Human Thrombopoietin/Tpo (Catalog # BT-TPO-AFL) stimulates proliferation in the MO7e human megakaryocytic leukemic cell line. The ED_{50} for this effect is 0.050-0.500 ng/mL.

SDS-PAGE



Animal-Free™ Recombinant Human Thrombopoietin/Tpo Protein SDS-PAGE. 2 µg/lane of Animal-Free™ Recombinant Human Thrombopoietin/Tpo Protein (Catalog # BT-TPO-AFL) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 18-19 kDa, under reducing conditions.

BACKGROUND

Thrombopoietin (TPO) is a crucial regulator of hematopoietic stem cell (HSC) differentiation, maturation, and proliferation, as well as megakaryocytopoiesis and thrombopoiesis. TPO is often used in conjunction with Stem Cell Factor (SCF) and Flt-3 ligand in cell culture protocols to expand HSCs for bone marrow transplantation and cellular therapies. When combined with SCF and Flt-3 ligand, it promotes the differentiation of HSCs into megakaryocytes, leading to the production of platelets. It has shown promise in emerging cellular therapies for treating sickle cell disease, beta thalassemia, and other blood-related disorders. Moreover, TPO in combination with other cytokines is utilized in the generation of iNK cells, which have the potential to be incorporated into cellular immunotherapies.

MANUFACTURING SPECIFICATIONS

Animal-Free Manufacturing Conditions

Our dedicated controlled-access animal-free laboratories ensure that at no point in production are the products exposed to potential contamination by animal components or byproducts. Every stage of manufacturing is conducted in compliance with R&D Systems' stringent Standard Operating Procedures (SOPs). Production and purification procedures use equipment and media that are confirmed animal-free.

Production

- All molecular biology procedures use animal-free media and dedicated labware.
- Dedicated fermentors are utilized in committed animal-free areas.

Purification

- Protein purification columns are animal-free.
- Bulk proteins are filtered using animal-free filters.
- Purified proteins are stored in animal-free containers in a dedicated cold storage room.

Quality Assurance

- Low Endotoxin Level.
- No impairment of biological activity.
- High quality product obtained under stringent conditions.
- For *ex vivo* research or bioproduction, **additional documentation** can be provided.

Please read our complete Animal-Free Statement

Bio-Techne®
Global | bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL: 1.612.379.2956
USA | TEL: 800.343.7475 Canada | TEL: 855.668.8722 Europe | Middle East | Africa TEL: +44.0.1235.529449
China | info.cn@bio-techne.com TEL: 400.821.3475