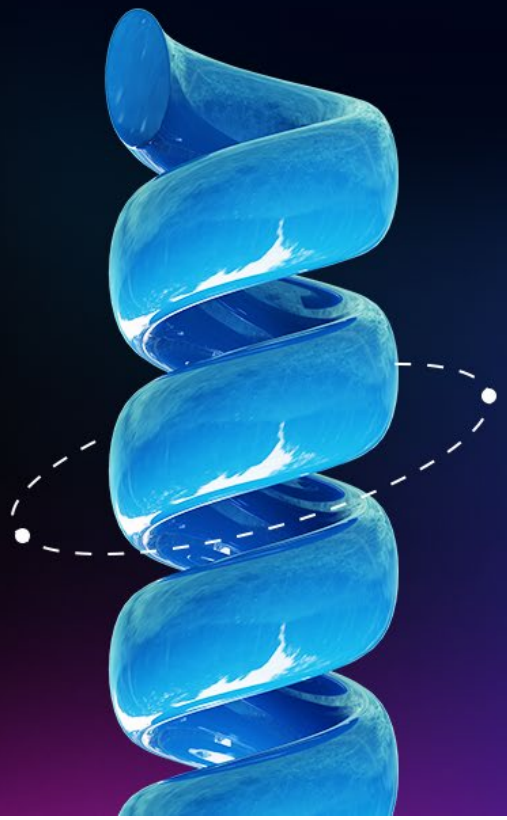
bio-techne®

Redefining Industry Standards

WITH NEXT GENERATION Thrombopoietin (TPO)



Renowned R&D Systems™ quality with Bio-Techne Innovation

For almost 40 years, R&D Systems™, a Bio-Techne brand, has strived to offer high quality proteins to enable your scientific research. Over the years, we continuously improve by incorporating scientific advancements in protein purification and cell culture.

Rather than just meeting industry standards, we're on a mission to define them. Our modernized methods safeguard your access to high-quality recombinant proteins throughout your research journey.

Our **next generation** of cytokines and growth factors merges our renowned quality and innovation, offering you an unparalleled combination of dependability and stability of supply. These best-in-class proteins ensure your research remains at the forefront of progress. Consider our **Next Generation Thrombopoietin** (Catalog # 288-TPH) and explore the key benefits!

Key Benefits of Our Next Generation Thrombopoietin Protein

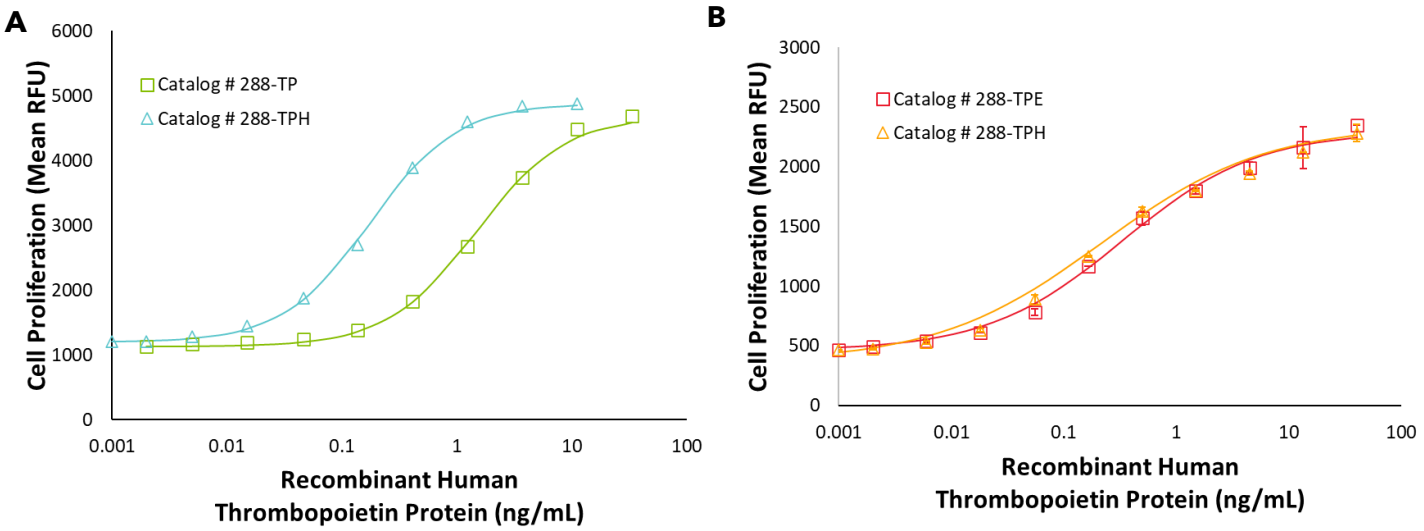
Increased Supply: Improved manufacturing processes allow for greater scalability & robust supply chain.

Equivalent Bioactivity: Our next generation TPO protein displays the same activity as our *E.coli* TPO protein, and superior bioactivity to our legacy TPO protein.

Time & Cost-Savings: Cost-effective proteins with larger lot sizes, allowing for less time spent on bridging studies.

Learn more | bio-techne.com/proteins/reagents/nextgenerationproteins

Figure 1: Analysis of Next Generation Thrombopoietin Protein Bioactivity



New Recombinant Human TPO Protein Activity. (**A**) The bioactivities of the original (Catalog # 288-TP) and the new (Catalog # 288-TPH) Recombinant Human TPO proteins were compared in a cell proliferation assay using MO7e human megakaryocytic leukemic cells . Based on this assay, the new TPO displays higher activity. (**B**) The bioactivities of our E.coli version (Catalog # 288-TPE) and the new (Catalog # 288-TPH) Recombinant Human TPO proteins were compared in a cell proliferation assay using MO7e human megakaryocytic leukemic cells . Based on this assay, both proteins display similar activity.

Table: Comparison of Legacy and Next Generation Recombinant Human TPO Proteins

Specifications	288-TP (Original)	288-TPE (E. coli version)	288-TPH (Next Generation)
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 0.03-0.3 ng/mL.	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 0.05-0.5 ng/mL.	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 0.05-0.5 ng/mL.
Source	*Spodoptera frugiperda,* Sf21 (baculovirus)-derived human Thrombopoietin/Tpo protein Ser22-Gly353	*E. coli*-derived human Thrombopoietin/Tpo protein Ser22-Leu195	Human embryonic kidney cell, HEK293-derived human Thrombopoietin/Tpo protein Ser22-Leu195, with a C-terminal 6-His tag
Purity	>95%, by SDS-PAGE	>95%, by SDS-PAGE	>95%, by SDS-PAGE
N-terminal Sequence	Ser22	Ala-Ser22	Ser22
Predicted Molecular Mass	35 kDa	18.7 kDa	19 kDa
Pack Sizes	5, 25, 200 ug, 1 mg	10, 50, 100, 250, 500 ug, 1 mg	10, 50, 100, 500 ug, 1 mg
Formulation	Lyophilized from a 0.2 µm filtered solution in Acetonitrile and TFA.	Lyophilized from a 0.2 µm filtered solution in Sodium Acetate.	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose.
Endotoxin	<1.0 EU per 1 µg of the protein by the LAL method.	<0.10 EU per 1 µg of the protein by the LAL method.	<0.10 EU per 1 µg of the protein by the LAL method.

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