

Recombinant Human Thrombopoietin^{hex}

Product Data Sheet

human cell expressed Thrombopoietin^{hex}

Source	A DNA sequence encoding the human Thrombopoietin (TPO) protein sequence (containing the signal peptide sequence, and the mature TPO sequence) was expressed in modified human 293 cells.
Molecular Mass	Apollo Thrombopoietin ^{hex} migrates as a broad band between 75 and 100 kDa in SDS-PAGE due to post-translation modifications, in particular glycosylation. This compares with unmodified Thrombopoietin that has a predicted molecular mass of 35.5 kDa.
pI	Apollo Thrombopoietin ^{hex} separates into a number of isoforms with a pI less than 5.0 in 2D PAGE due to post-translation modifications, in particular glycosylation. This compares with the unmodified Thrombopoietin that has a predicted pI of 9.69.
% Carbohydrate	Apollo purified Thrombopoietin ^{hex} consists of greater than 35% carbohydrate by weight.
Glycosylation	Apollo Thrombopoietin ^{hex} contains N- and O-linked oligosaccharides.
Purity	>95%, as determined by SDS-PAGE and visualized by silver stain.
Formulation	When reconstituted in 0.5 ml sterile phosphate-buffered saline, the solution will contain 1% human serum albumin (HSA) and 10% trehalose.
Reconstitution	It is recommended that 0.5 ml of sterile phosphate-buffered saline be added to the vial.
Storage	Lyophilized products should be stored at 2 to 8°C. Following reconstitution short-term storage at 4°C is recommended, and longer-term storage of aliquots at -18 to -20°C. Repeated freeze thawing is not recommended.
Activity	The ED ₅₀ of TPO is typically 2.5 to 10 ng/ml as measured in a cell proliferation assay using the human growth factor dependent TF-1 cell line.
Background Information	<p>Thrombopoietin (TPO), a hormone predominately expressed in liver and bone marrow stromal cells, is the principal regulator of proliferation and differentiation of megakaryocytes, and is the major cytokine involved in platelet production. TPO has also been shown to play a role in production of primitive pluripotent stem cells and progenitor cells, such as erythroid and myeloid progenitor cells.</p> <p>Human TPO cDNA encodes a 353 amino acid precursor protein that is cleaved upon secretion from the cell. Mature human TPO is a 95kDa glycoprotein that comprises two domains, a receptor binding domain that shares homology with erythropoietin, and a heavily O- and N-linked glycosylated region at the carboxy terminus.</p> <p>Potential clinical applications for TPO include the <i>in-vivo</i> expansion of platelet numbers following thrombocytopenia inducing effects of chemotherapy. TPO also shows promise in the <i>ex-vivo</i> expansion of autologous haematopoietic progenitor cells prior to re-infusion into patients with conditions such as multiple myeloma and NHL following myeloablative chemotherapy.</p> <p>For recent reviews on TPO, please refer to Solberg (2005) Current Hematology Reports 4(6):423-8 and Fishley & Alexander (2004) Growth Factors. 22(3):151-5.</p>

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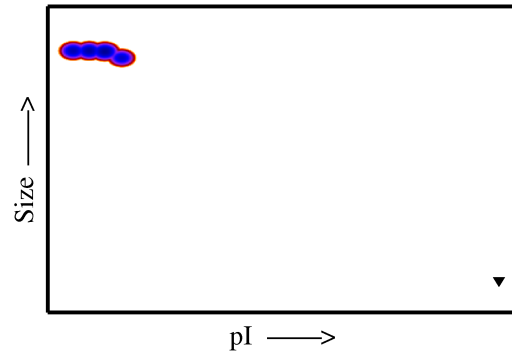


human cell expressed Thrombopoietin^{hcx}

Densitometry

Post-translational modifications result in protein heterogeneity. The densitometry scan demonstrates that purified human cell expressed protein exists in multiple isoforms, which differ according to their level of post-translational modification. Expression of these isoforms is highly significant for cell biology, as they more closely resemble the native human proteins.

The triangle indicates theoretical pI and MW of human TPO protein. The original 2D gel from which the densitometry scan was is available on request.



Theoretical Sequence

SPAPPACDLRVLKLLRDSHVLHSRLSQCPEVHPLPTPVLLPAVDFSLGEWKTQMEETKAQ
DILGAVTLLLEGVMAARGQLGPTCLSSLLGQLSGQVRLLLGALQSLLGTQLPPQGRTTAHKD
PNAIFLSFQHLLRGKVRFLMLVGGSTLCVRRAPPTTAVPSRTSLVLTNLNLPNRTSGLLETNF
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TPTSPLLNTSYTHSQNLSQEG