SYMANSIS
CELL SIGNALING SCIENCE

Product Data Sheet

Human Cell Expressed EPO^{HCX} Catalog # 3005

Source	A DNA sequence encoding the human EPO protein sequence (containing the signal peptide sequence, and the mature Epo sequence) was expressed in modified human 293 cells
Molecular Mass	Symansis EPO ^{HCX} migrates as a broad band between 25 and 40 kDa in SDS-PAGE due to post-translation modifications, in particular glycosylation. This compares with the unmodified EPO that has a predicted molecular mass of 18.4 kDa.
pI	The Symansis EPO ^{HCX} separates into a number of isoforms in 2D PAGE due to the presence of post-translational modifications, in particular glycosylation. The pI of the isoforms range between 4.1 and 8.5. This compares with a predicted pI of 7.88 for the unmodified EPO.
% Carbohydrate	Purified Symansis EPO ^{HCX} consists of 25-55% carbohydrate by weight.
Glycosylation	Symansis EPO ^{HCX} has N-linked and O-linked oligosaccharides. All 3 N-linked sites are verified by peptide mass fingerprinting.
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 ED50 of EPO ^{HCX} is typically 0.2 - 0.8 ng/ml as measured in a cell proliferation assay using the human growth factor-dependent TF-1 cell line.
Background Information	Erythropoietin (EPO) is a hormone produced primarily by the kidney and is the main regulator of red blood cell production. Its major functions are to promote the differentiation and development of red blood cells and to initiate the production of hemoglobin. EPO acts by binding to a specific erythropoietin receptor (EPOR) present on target cells, the red cell precursors in the bone marrow, stimulating them to transform into mature erythrocytes. Human EPO cDNA encodes a 193 amino acid residue precursor protein that is processed to yield a 165 amino acid residue mature protein. EPO contains one O-linked and three N-linked glycosylation sites. Glycosylation of EPO is required for EPO biological activities *in vivo*. Recombinant EPO has been approved for the treatment of anemia associated with chronic renal failure, anemia secondary to AZT treatment of AIDS, and anemia associated with cancer. There is recent evidence that recombinant EPO may be useful for cardioprotection and neuroprotection. For recent reviews on EPO, please refer to Bartesaghi S, *et al*. (2005) *Neurotoxicology*. **26**(5): 923-8; Brines M & Cerami A, (2005) *Nat Rev Neurosci*. **6**(6): 484-94; Engert A, (2005) *Ann Oncol*. **16**(10): 1584-95.

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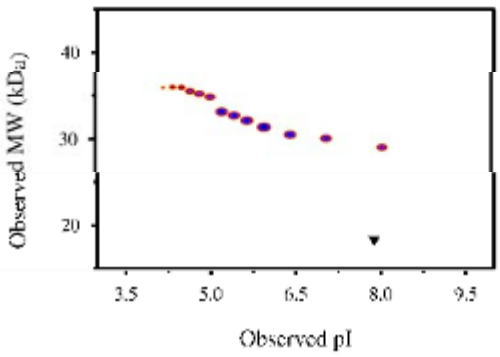
Densitometry

Post-translational modifications result in protein heterogeneity. The densitometry scan demonstrates the 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 the protein. The original 2D gel from which the densitometry scan was derived is available upon request.



Theoretical Sequence

APPRLICDSRVLERYLLEAKEAENITTGCAEHCSLNENITVPDTKVNFYAWKRMEVGQQAVE
VWQGLALLSEAVLRGQALLVNSSQPWEPLQLHVDKAVSGLRSLTTLLRALGAQEEAISPPD
AASAAPLRTITADTFRKLFRVYSNFLRGKLKLYTGEACRTGDR

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