

Recombinant Rat Erythropoietin

#R00621

Size: 5 µg/100 µg/500 µg

Stability & Storage

Please use a manual defrost freezer and avoid repeated freeze-thaw cycles.

-Lyophilized protein should be stored at ≤ -20°C, stable for 12 months after receipt.

-Reconstituted protein solution can be stored at 2-8°C for 1-2 weeks.

-Aliquots of reconstituted samples are stable at ≤ -20°C for 3 months.



Warning: This product is intended for scientific research only. It is not to be used for medical or diagnostic procedures in humans or animals, nor as a food, cosmetic, or household product.

Background

Erythropoietin (EPO) is a 34 kDa glycoprotein hormone in the type I cytokine family and is related to thrombopoietin. Its three N-glycosylation sites, four alpha helices, and N- to C-terminal disulfide bond are conserved across species. Glycosylation of EPO is required for biological activities in vivo. Mature rat EPO shares 95% amino acid sequence identity with mouse EPO and 72%-82% with bovine, canine, equine, feline, human, ovine, and porcine EPO. EPO is primarily produced in the kidney by a population of fibroblast-like cortical interstitial cells adjacent to the proximal tubules.

It is also produced in much lower, but functionally significant amounts by fetal hepatocytes and by adult liver and brain. EPO promotes erythrocyte formation by preventing the apoptosis of early erythroid precursors which express the EPO receptor (EPO R). EPO R has also been described in brain, retina, heart, skeletal muscle, kidney, endothelial cells, and a variety of tumor

cells. Ligand induced dimerization of EPO R triggers JAK2-mediated signaling pathways followed by receptor/ligand endocytosis and degradation. Rapid regulation of circulating EPO allows tight control of erythrocyte production and hemoglobin concentrations. Anemia or other causes of low tissue oxygen tension induce EPO production by stabilizing the hypoxia-inducible transcription factors HIF-1α and HIF-2α. EPO additionally plays a tissue protective role in ischemia by blocking apoptosis and inducing angiogenesis.

AA Sequence

Ala27-Arg192, Accession # P29676

Reconstitution

Always centrifuge tubes before opening. Do not mix by vortex or pipetting. Reconstitute in sterile distilled water to a concentration of 0.1-1.0 mg/mL. Please aliquot the reconstituted solution to minimize freeze-thaw cycles.

Product Specification

Species	Rat
Source	CHO Cells
Molecular Weight	Recombinant Rat EPO Protein, a monomer, containing 166 amino acid residues, has a predicted molecular mass of approximately 18.5 kDa. As a result of glycosylation, the recombinant protein migrates with an apparent molecular mass ranging from 34 to 40 kDa in SDS-PAGE under reducing conditions.
Purity	> 95% by SDS-PAGE gel and HPLC analyses.
Biological Activity	Measured in a cell proliferation assay using TF- 1 human erythroleukemic cells. The ED ₅₀

	for this effect is 0.07-0.4 ng/mL.
Formulation	Lyophilized from a 0.22 µm filtered solution of in PBS. See CoA for details.
Endotoxin	Less than 0.1 EU/µg of rRtEPO as determined by LAL test.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature listed below.
