

## Recombinant Human EPO Protein (His Tag)

**Catalog Number:** PDEH100878

**Note:** Centrifuge before opening to ensure complete recovery of vial contents.

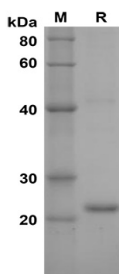
### Description

<b>Species</b>	Human
<b>Source</b>	E.coli-derived Human EPO protein Ala28-Arg193, with an C-terminal His
<b>Calculated MW</b>	18.2 kDa
<b>Observed MW</b>	22 kDa
<b>Accession</b>	P01588
<b>Bio-activity</b>	Not validated for activity

### Properties

<b>Purity</b>	> 90% as determined by reducing SDS-PAGE.
<b>Endotoxin</b>	< 10 EU/mg of the protein as determined by the LAL method
<b>Storage</b>	Generally, lyophilized proteins are stable for up to 12 months when stored at -20 to -80°C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.
<b>Shipping</b>	This product is provided as lyophilized powder which is shipped with ice packs.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with 5% Trehalose and 5% Mannitol.
<b>Reconstitution</b>	It is recommended that sterile water be added to the vial to prepare a stock solution of 0.5 mg/mL. Concentration is measured by UV-Vis.

### Data



SDS-PAGE analysis of Human EPO proteins, 2 µg/lane of Recombinant Human EPO proteins was resolved with SDS-PAGE under reducing conditions, showing bands at 22 kDa.

### Background

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Toll-free: 1-888-852-8623  
Web: [www.elabscience.com](http://www.elabscience.com)

Tel: 1-832-243-6086  
Email: [techsupport@elabscience.com](mailto:techsupport@elabscience.com)

Fax: 1-832-243-6017

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 the EPO protein is required for biological activities in vivo. The mature human EPO protein shares 75%-84% amino acid sequence identity with bovine, canine, equine, feline, mouse, ovine, porcine, and rat 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 in adult liver and brain. EPO promotes erythrocyte formation by preventing the apoptosis of early erythroid precursors which express the erythropoietin 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 erythropoietin production by stabilizing the hypoxia-inducible transcription factors HIF-1 alpha and HIF-2 alpha. EPO additionally plays a tissue-protective role in ischemia by blocking apoptosis and inducing angiogenesis.

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