**DESCRIPTION**

**Source**
Chinese Hamster Ovary cell line, CHO-derived human Erythropoietin/EPO protein

**Accession #** NP_000790.2

**Predicted Molecular Mass**
21 kDa

**SPECIFICATIONS**

**SDS-PAGE**
37 kDa, reducing conditions

**Activity**


The ED50 for this effect is 0.015-0.075 units/mL.

**Endotoxin Level**
<0.10 EU per 1 μg of the protein by the LAL method.

**Formulation**
Lyophilized from a 0.2 μm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

**Reconstitution**
Reconstitute at 500 U/mL in sterile PBS containing at least 0.1% human or bovine serum albumin.

**Shipping**
The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

**Stability & Storage**
Use a manual defrost freezer and avoid repeated freeze-thaw cycles.
- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

**DATA**

**SEC-MALS**

Recombinant Human Erythropoietin/EPO (Tissue Culture Grade) Protein SEC-MALS. Recombinant human EPO (Catalog # 287-TC) has a molecular weight (MW) of 28.8 kDa as analyzed by SEC-MALS, suggesting that this protein is a monomer. MW may differ from predicted MW due to post-translational modifications (PTMs) present (i.e. Glycosylation).

**Bioactivity**

Bioactivity of Erythropoietin / EPO Protein Recombinant Human Erythropoietin / EPO (Catalog # 287-TC) stimulates cell proliferation in the TF-1 human erythroleukemic cell line in a dose-dependent manner. The ED50 for this effect is 0.015-0.075 units/mL.
Erythropoietin (EPO) is a 34 kDa glycoprotein hormone in the type I cytokine family and is related to thrombopoietin (1). Its three N-glycosylation sites, four alpha helices, and N- to C-terminal disulfide bond are conserved across species (2, 3). Glycosylation of the EPO protein is required for biological activities in vivo (4). 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 (5). It is also produced in much lower, but functionally significant amounts by fetal hepatocytes and in adult liver and brain (6-8). EPO promotes erythrocyte formation by preventing the apoptosis of early erythroid precursors which express the erythropoietin receptor (EPO R) (8, 9). EPO R has also been described in brain, retina, heart, skeletal muscle, kidney, endothelial cells, and a variety of tumor cells (7, 8, 10, 11). Ligand induced dimerization of EPO R triggers JAK2-mediated signaling pathways followed by receptor/ligand endocytosis and degradation (1, 12). 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-1α and HIF-2α (1, 6). EPO additionally plays a tissue-protective role in ischemia by blocking apoptosis and inducing angiogenesis (7, 8, 13).

References: