

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived human Erythropoietin/EPO protein Ala28-Arg193 Accession # NP_000790.2
Structure / Form	Biotinylated via amines
Predicted Molecular Mass	21 kDa

SPECIFICATIONS

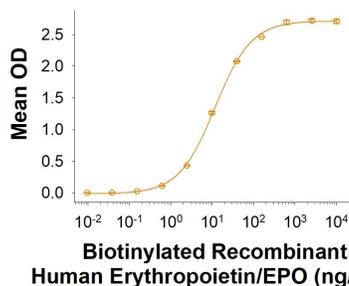
SDS-PAGE	33-44 kDa, under reducing conditions.
Activity	Measured by its binding ability in a functional ELISA. Biotinylated Recombinant Human Erythropoietin/EPO binds to Recombinant Human Erythropoietin R Fc Chimera Protein (Catalog # 963-ER) with an ED ₅₀ of 4.00-40.0 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 250 µg/mL in water.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> • 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.

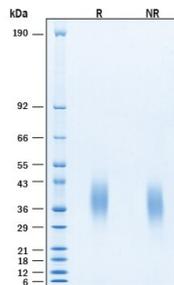
DATA

Binding Activity



Biotinylated Recombinant Human Erythropoietin/EPO Protein Binding Activity. Measured by its binding ability in a functional ELISA. Biotinylated Recombinant Human Erythropoietin/EPO Protein (Catalog # BT11264) binds to Recombinant Human Erythropoietin R Fc Chimera Protein (Catalog # 963-ER) with an ED₅₀ of 4.00-40.0 ng/mL.

SDS-PAGE



Biotinylated Recombinant Human Erythropoietin/EPO Protein SDS-PAGE. 2 µg/lane of Biotinylated Recombinant Human Erythropoietin/EPO Protein (Catalog # BT11264) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 33-44 kDa under reducing conditions.

BACKGROUND

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-1 α and HIF-2 α (1, 6). EPO additionally plays a tissue-protective role in ischemia by blocking apoptosis and inducing angiogenesis (7, 8, 13).

References:

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