Recombinant Human Erythropoietin
(Tissue Culture Grade)
Catalog Number: 287-TC

DESCRIPTION

Source
Chinese Hamster Ovary cell line, CHO-derived
Ala28-Arg193
Accession # CAA26094

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.

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 Epo is required for biological activities in vivo (4). Mature human Epo 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 Epo 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 Epo 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:

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