Recombinant Mouse Erythropoietin/EPO (His, Flag)

Information

Gene ID	13856
Accession #	Q0VED9
Alternate Names	ECYT5; EP; EPO; epoetin; Erythropoietin; MGC138142; MVCD2
Source	HEK293
Protein sequence	APPRLICDSRVLERYILEAKEAENVTMGCAEGPRLSENITVPDTKVNFYAWKRMEVEEQAIEVWQGLSLLSEA ILQAQALLANSSQPPETLQLHIDKAISGLRSLTSLLRVLGAQKELMSPPDTTPPAPLRTLTVDTFCKLFRVYANF LRGKLKLYTGEVCRRGDR
Tag	C-His & C-Flag
M.Wt	The protein has a calculated MW of 20.6 KDa.
Appearance	Solution protein
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles - 36 months from date of receipt, -20 to -70°C as supplied
Concentration	1 mg/mL
Formulation	Supplied as a 0.2 μm filtered solution in PBS, pH7.4.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. This s olution can be diluted into other aqueous buffers.
Biological Activity	Fully biologically active as determined by a cell proliferation assay using BaF3 mouse pro-B cells transfected with mouse EPO R. The EC50 for this effect is 0.84 ng/mL.
Shipping Condition	Shipping with dry ice.
Handling	Centrifuge the vial prior to opening.
Usage	For Research Use Only! Not to be used in humans.

Quality Control

Purity	> 95 % by SDS-PAGE.
Endotoxin	Less than 1.0 EU/μg as determined by LAL method.

Description

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 mouse EPO shares 95% amino acid sequence identity with rat EPO and 73%-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 [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 (EPOR))[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 EPOR 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-1 alpha and HIF-2 alpha [1,6]. EPO additionally plays a tissue-protective role in ischemia by blocking apoptosis and inducing angiogenesis [7,8,13].

Reference

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