

Recombinant Human Erythropoietin (EPO) (carrier-free)

Catalog# / Size	587102 / 10 µg 587104 / 25 µg 587106 / 100 µg 587108 / 500 µg
Regulatory Status	RUO
Other Names	Hematopoietin, MVCD2, EP
Description	<p>Human Erythropoietin (EPO) was initially purified from urine of a patient with aplastic anemia. EPO is a glycoprotein composed of 40-60% carbohydrates, and its molecular weight varies from 30-34 kD depending on the carbohydrate percentage. Hypoxia induces erythropoiesis, and hypoxia inducible factor (HIF) is directly involved in EPO expression. HIF is a heterodimer (HIF-1α, HIF-2α, and β subunits) transcription factor, and it is regulated by HIF-prolyl hydroxylase (HIF-PH) that hydroxylates the α subunits, targeting them for ubiquitination and subsequent degradation. HIF-PH is a sensor of levels of iron, oxygen, and metabolic activity. High levels of HIF protein induce EPO production in the kidney and liver, and mobilization of iron to support erythropoiesis. EPO binds to the EPOR, and transcripts of this receptor have been detected in non-erythroid precursors such as endothelial cells and renal proximal epithelial cells; nevertheless, it has been published that functional erythropoietin receptor is not detected in endothelial, cardiac, neuronal, and renal cells. Several transcription factors play a role in the expression of EPOR such as GATA 1, Friend of GATA (Fog1), and the erythroid specific factor SCL/Tal 1. EPO has been used in the treatment of anemia associated with chronic kidney disease, in cancer patients on chemotherapy, and in antiviral HIV therapy.</p>

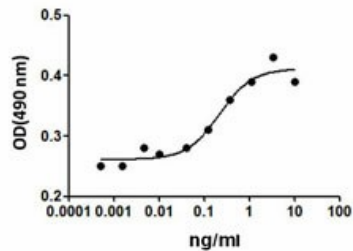
Product Details

Source	Human EPO, amino acids (Ala28-Arg192) (Accession# AAI43226.1) was expressed in CHO cells.
Molecular Mass	The 165 amino acid recombinant protein has a predicted molecular mass of approximately 18 kD. The DTT-reduced and non-reduced protein migrate at approximately 37-57 kD and 35-55 kD by SDS-PAGE respectively. The N-terminal amino acid is Ala.
Purity	>98%, as determined by Coomassie stained SDS-PAGE.
Formulation	0.22 µm filtered protein solution is in PBS.
Endotoxin Level	Less than 0.01 ng per µg cytokine as determined by the LAL method.
Concentration	10 and 25 µg sizes are bottled at 200 µg/mL. 100 µg size and larger sizes are lot-specific and bottled at the concentration indicated on the vial. To obtain lot-specific concentration, please enter the lot number in our Concentration and Expiration Lookup or Certificate of Analysis online tools.
Storage & Handling	Unopened vial can be stored between 2°C and 8°C for up to 2 weeks, at -20°C for up to six months, or at -70°C or colder until the expiration date. For maximum results, quick spin vial prior to opening. The protein can be aliquoted and stored at -20°C or colder. Stock solutions can also be prepared at 50 - 100 µg/mL in appropriate sterile buffer, carrier protein such as 0.2 - 1% BSA or HSA can be added when preparing the stock solution. Aliquots can be stored between 2°C and 8°C for up to one week and stored at -20°C or colder for up to 3 months. Avoid repeated freeze/thaw cycles.
Activity	ED ₅₀ = 0.1 - 0.6 ng/ml, corresponding to a specific activity of 1.67 - 10 x 10 ⁶ units/mg, as determined by the dose dependent stimulation of TF-1 cells proliferation.
Application	Bioassay
Application Notes	BioLegend carrier-free recombinant proteins provided in liquid format are shipped on blue-ice. Our comparison testing data indicates that when handled and stored as recommended, the liquid format has equal or better stability and shelf-life compared to commercially available lyophilized proteins after reconstitution. Our liquid proteins are verified in-house to maintain activity after shipping on blue ice and are backed by our 100% satisfaction guarantee . If you have any concerns, contact us at tech@biolegend.com .
Product Citations	1. Yasuoka Y, <i>et al.</i> 2021. Molecules. 26: PubMed

Antigen Details

Distribution	EPO is primarily expressed in kidney (70-90% of the total EPO) and liver. EPO is expressed by hepatocytes, cortical interstitial fibroblasts in ischemic kidneys, astrocytes, and neurons under hypoxia.
Function	EPO is the major regulator of differentiation, proliferation, and survival of erythroid progenitors. EPO expression is induced by hypoxia; HIF, among other transcription factors, regulates EPO expression. EPO has a possible role in neuroprotection.
Interaction	Erythroid progenitor cells
Ligand/Receptor	EpoR (homodimer)
Cell Type	Embryonic Stem Cells
Biology Area	Cell Biology, Signal Transduction, Stem Cells
Molecular Family	Growth Factors, Cytokines/Chemokines
Antigen References	<ol style="list-style-type: none">1. Chin K, <i>et al.</i> 2000. <i>Brain Res. Mol. Brain Res.</i> 81:29.2. Snow JW, <i>et al.</i> 2009. <i>J. Biol. Chem.</i> 284:29310.3. Kassouf MT, <i>et al.</i> 2010. <i>Genome Res.</i> 2010:20:1064.4. Paliege A, <i>et al.</i> 2010. <i>Kidney Int. (Nature)</i> 77:312.5. Sinclair AM, <i>et al.</i> 2010. <i>Blood</i> 115:4264.6. Alnaeeli M, <i>et al.</i> 2012. <i>Anat. Res. Int.</i> doi:10.1155/2012/953264.
Gene ID	2056

Product Data



TF-1 cell proliferation induced by human EPO.

For research use only. Not for diagnostic use. Not for resale. BioLegend will not be held responsible for patent infringement or other violations that may occur with the use of our products.

*These products may be covered by one or more Limited Use Label Licenses (see the BioLegend Catalog or our website, www.biolegend.com/ordering#license). BioLegend products may not be transferred to third parties, resold, modified for resale, or used to manufacture commercial products, reverse engineer functionally similar materials, or to provide a service to third parties without written approval of BioLegend. By use of these products you accept the terms and conditions of all applicable Limited Use Label Licenses. Unless otherwise indicated, these products are for research use only and are not intended for human or animal diagnostic, therapeutic or commercial use.

BioLegend Inc., 8999 BioLegend Way, San Diego, CA 92121 www.biolegend.com
Toll-Free Phone: 1-877-Bio-Legend (246-5343) Phone: (858) 768-5800 Fax: (877) 455-9587