

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Erythropoietin/EPO in direct ELISAs and Western blots.
Source	Polyclonal Rabbit IgG
Purification	Protein A or G purified
Immunogen	Chinese hamster ovary cell line (CHO)-derived recombinant human Erythropoietin/EPO
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the Technical Information section on our website.

	Recommended Concentration	Sample
Western Blot	1 µg/mL	Recombinant Human Erythropoietin/EPO (Ultrapure) (Catalog # 286-EP)
Immunohistochemistry	5-15 µg/mL	See Below
Neutralization	Measured by its ability to neutralize Erythropoietin/EPO-induced proliferation in the TF-1 human erythroleukemic cell line. Kitamura, T. et al. (1989) J. Cell Physiol. 140:323. The Neutralization Dose (ND ₅₀) is typically <3 µg/mL in the presence of 0.2 units/mL Recombinant Human Erythropoietin/EPO (Tissue Culture Grade).	

DATA

Neutralization

Cell Proliferation Induced by Erythropoietin/EPO and Neutralization by Human Erythropoietin/EPO Antibody. Recombinant Human Erythropoietin/EPO (Tissue Culture Grade) (Catalog # 287-TC) stimulates proliferation in the TF-1 human erythroleukemic cell line in a dose-dependent manner (orange line) as measured by Resazurin (Catalog # AR002). Proliferation elicited by Recombinant Human Erythropoietin/EPO (Tissue Culture Grade) (0.2 units/mL) is neutralized (green line) by increasing concentrations of Rabbit Anti-Human Erythropoietin/EPO Polyclonal Antibody (Catalog # AB-286-NA). The ND₅₀ is typically <3 µg/mL.

Immunohistochemistry

Erythropoietin/EPO in Human Kidney. Erythropoietin/EPO was detected in immersion fixed paraffin-embedded sections of human kidney using Rabbit Anti-Human Erythropoietin/EPO Polyclonal Antibody (Catalog # AB-286-NA) at 15 µg/mL for 1 hour at room temperature followed by incubation with the Anti-Rabbit IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC003). Tissue was stained with DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to convoluted tubules. View our protocol for [IHC Staining with VisUCyte HRP Polymer Detection Reagents](#).

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 1 mg/mL in sterile PBS.
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. • 6 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. Its three N-glycosylation sites, four alpha helices, and N- to C-terminal disulfide bond are conserved across species. Glycosylation of EPO is required for biological activities in vivo. 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. It is also produced in much lower, but functionally significant amounts by fetal hepatocytes and in adult liver and brain. EPO promotes erythrocyte formation by preventing the apoptosis of early erythroid precursors which express the EPO receptor (EPO R). EPO R has also been described in brain, retina, heart, skeletal muscle, kidney, endothelial cells, and a variety of tumor cells. Ligand induced dimerization of EPO R triggers JAK2-mediated signaling pathways followed by receptor/ligand endocytosis and degradation. 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. EPO additionally plays a tissue-protective role in ischemia by blocking apoptosis and inducing angiogenesis.