# Human Erythropoietin Antibody

Polyclonal Rabbit IgG

Catalog Number: AB-286-NA

## DESCRIPTION

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|---|---|
| **Species Reactivity** | Human |
| **Specificity** | Detects human Erythropoietin 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 |
| **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. |

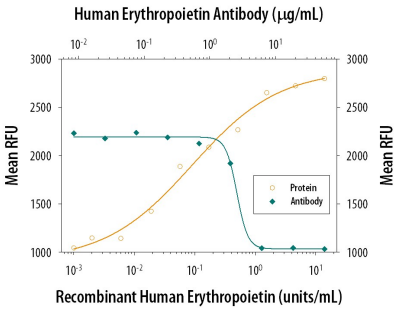
## APPLICATIONS

**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 (Ultrapure) (Catalog # 286-EP) |
| **Immunohistochemistry** | 5-15 µg/mL | See Below |
| **Neutralization** | Measured by its ability to neutralize Erythropoietin-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 (Tissue Culture Grade). | |

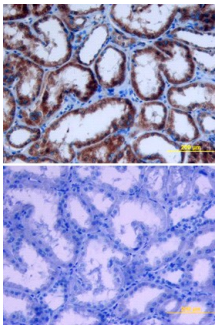
## DATA

### Neutralization




**Cell Proliferation Induced by Erythropoietin and Neutralization by Human Erythropoietin Antibody.** Recombinant Human Erythropoietin (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 (Tissue Culture Grade) (0.2 units/mL) is neutralized (green line) by increasing concentrations of Rabbit Anti-Human Erythropoietin Polyclonal Antibody (Catalog # AB-286-NA). The $ND_{50}$ is typically <3 µg/mL.

### Immunohistochemistry



**Erythropoietin in Human Kidney Cancer Tissue.** Erythropoietin was detected in immersion fixed paraffin-embedded sections of human kidney cancer tissue using Rabbit Anti-Human Erythropoietin Polyclonal Antibody (Catalog # AB-286-NA) at 10 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Rabbit HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS005) and counterstained with hematoxylin (blue). Lower panel shows a lack of labeling if primary antibodies are omitted and tissue is stained only with secondary antibody followed by incubation with detection reagents. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

## PREPARATION AND STORAGE

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| **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** | **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**<br>● 12 months from date of receipt, -20 to -70 °C as supplied.<br>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.<br>● 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.



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