Human Erythropoietin/EPO Antibody

Monoclonal Mouse IgG_1 Clone # 971019

Catalog Number: MAB2872

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Erythropoietin/EPO in direct ELISAs.
Source	Monoclonal Mouse IgG_1 Clone # 971019
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Chinese Hamster Ovary cell line CHO-derived human Erythropoietin/EPO protein Ala28-Arg193 Accession # CAA26094
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. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

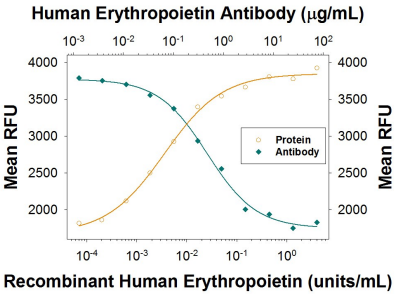
APPLICATIONS

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.*

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 0.02-0.2 µg/mL in the presence of 0.3 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 theTF-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) (0.3 units/mL) is neutralized (green line) by increasing concentrations of Mouse Anti-Human Erythropoietin/EPO Monoclonal Antibody (Catalog # MAB2872). The ND_{50} is typically 0.02-0.2 µg/mL.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
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. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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Human Erythropoietin/EPO Antibody

Monoclonal Mouse IgG_1 Clone # 971019

Catalog Number: MAB2872

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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