ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

Human Erythropoietin (EPO) Antibodies

Cat # EPO11-M	Mouse Monoclonal Anti-human EPO IgG, aff pure	**SIZE**: 100 ug
Cat # EPO11-F	Mouse Monoclonal Anti-human EPO IgG-FITC conjugate	**SIZE**: 50 tests
Cat # EPO11-B	Mouse Monoclonal Anti-human EPO IgG-Biotin conjugate	**SIZE**: 50 tests

Erythropoietin (EPO), Also called hematopoietin or hemopoietin, is produced by the peritubular capillary endothelial cells in the kidney. EPO, a glycoprotein hormone, controls erythropoiesis, or red blood cell production. It is a cytokine for erythrocyte (red blood cell) precursors in the bone marrow. It also plays an important role in the brain's response to neuronal injury, and involved in the wound healing process. Human EPO (Protein accession #P01588; precursor 193 aa, mature protein 28-193 aa (166-aa; 19-22 kda) is glycoprotein that is ~80% conerved in various species.

When exogenous EPO is used as a performance-enhancing drug, it is classified as an erythropoiesis-stimulating agent (ESA). Exogenous EPO can often be detected in blood, due to slight difference from the endogenous protein, for example in features of posttranslational modification.

Erythropoietin is available as a therapeutic agent produced by recombinant DNA technology in mammalian cell culture. It is used in treating anaemia resulting from chronic kidney disease and myelodysplasia, from the treatment of cancer (chemotherapy and radiation), and from other critical illnesses (heart failure). In 1989, the U.S. Food and Drug Administration approved the hormone, called Epogen, which remains in use. More recently, a novel erythropoiesis-stimulating protein (NESP) has been produced. This glycoprotein demonstrates anti-anemic capabilities and has a longer terminal half-life than erythropoietin. NESP offers chronic renal failure patients a lower dose of hormones to maintain normal hemoglobin levels. There are two types of erythropoietin (and several brands) for people with anaemia, due to critical illness. These are:

Used for the treatment of anemia. Available under the names Epogen (Amgen), Epogin (Chugai), Epomax (Elanex), Eprex (Janssen-Cilag), NeoRecormon or Recormon (Roche), Dynepo (Shire Pharmaceuticals) and Procrit (Ortho Biotech). Variations in the glycosylation pattern of EPO distinguishes these products. Epogen, Epogin, Eprex and Procrit are generically known as epoetin alfa, NeoRecormon and Recormon as epoetin beta, Dynepo as epoetin delta and Epomax as epoetin omega. Epoetin zeta is the name used for some 'biosimilars' forms of epoetin alfa and is available under the names Silapo (Stada) and Retacrit (Hospira). Darbepoetin alfa is a form created by 5 substitutions (Asn-57, Thr-59, Val-114, Asn-115 and Thr-117) that create 2 new N-glycosylation sites. It has a longer circulating half-life in vivo. It is available under the name Aranesp (Amgen). EPO is being much misused as a performance-enhancing drug in endurance athletes.

Source of Antigen, Antibodies

Antigen	Purified recombinant human EPO protein
Ab Host/type	Mouse, monoclonal IgG1
2-Ab	**Goat Anti-mouse IgG-HRP conjugate** Cat # 40320 (AP, biotin, FITC conjugates also available)
-ve control	Cat # 20008-1, Mouse (non-immune) Serum IgG, purified, suitable for ELISA, Western, IHC as –ve control

Isotype Controls

Catalog#	**ProdDescription**
20102-101	Mouse IgG1 isotype control, purified
20102-101-1	Mouse IgG1 isotype control, purified
20102-101-APC	Mouse IgG1-APC conjugate (isotype control)
20102-101-B	Mouse IgG1-Biotin conjugate (isotype control)
20102-101-F	Mouse IgG1-FITC conjugate (isotype control)
20102-101-FP	Mouse IgG1-FITC-PE conjugate (isotype control)
20102-101-HP	Mouse IgG1-HRP conjugate (isotype control)
20102-101-PC5	Mouse IgG1-PE-Cy5 conjugate (isotype control)
20102-101-PE	Mouse IgG1-PE conjugate (isotype control)

Form & Storage of Antibodies/Peptide Control

Affinity pure IgG (with or without FITC)

☐ 100 ug/100ul ☐ solution ☐ lyophilized powder

Supplied in **Buffer**: PBS+0.05% azide, 0.2% BSA

Reconstitute powder in water.

Cat# EPO11-F, Anti-EPO IgG-FITC-conjugate

Purified antibody was coupled to FITC at F/P ratio ~3:7. The antibody is supplied in PBS, pH 7.4, 0.2% BSA and 0.05% azide in either **liquid** (50 ug/50 ul) or **lyophilized** in the same buffer. Reconstitute powder in PBS in to prepare stock solutions. Store at -20oC in suitable aliquots. Stability is ~6-12 months. Do not freeze and thaw.

Suggested conjugate dilutions are 1:200-1:2000 for immunofluorescence.
Absorption Wavelength: 495 nm
Emission Wavelength: 528 nm

Cat# EPO11-B, Anti-EPO IgG Biotin-conjugate

Purified antibody was coupled to Biotin using Biotinamidocaproate N-Hydroxysuccinimide Ester (BAC**)** at F/P ratio ~10-20:1. The antibody is supplied in PBS, pH 7.4, 0.2% BSA and 0.05% azide in either **lyophilized** or **liquid** form (50 ug/100 ul or or see lot sp. conc on the vial). Reconstitute powder in PBS to prepare stock solution. Store at -20oC in suitable aliquots. Stability is ~6-12 months. Do not freeze and thaw.

Suggested conjugate dilutions are 1:1,000-1:10,000 ELISA, 1:1K-1:10K for western.

Stability: 6-12 months at –20°C or below.

Shipping: 4°C for solutions and room temp for powder

Recommended Usage

Western Blotting (1-5 ug/ml) using ECL).

ELISA: purified EPO peptide can be used to coat ELISA plates at 1 ug/ml and detected with antibodies (0.1-1 ug/ml).

Histochemistry: We recommend the use of affinity purified antibody at 2-10 ug/ml.

Specificity & Cross-reactivity

The antibodies react with human EPO. Reacivity with EPO from mouse, rat or other species have not been studied. Purified recombinant human EPO protein is available for control studies.

General References: 1. Jacobs K (1985) Nature 313, 806-810; Lin FK (1985) PNAS 82, 7580-7584; Lai PH (1986) JBC 261, 3116-3121;

*This product is for In vitro research use only.

EPO11-M-F 140917A

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