SANTA CRUZ BIOTECHNOLOGY, INC.

Epo (B-4): sc-5290

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Erythropoietin, or Epo, is the primary factor responsible for regulating erythropoiesis during steady-state conditions and in response to blood loss and hemorrhage in the adult organism. In addition, Epo has been shown to play a role in primitive embryonic erythropoiesis. It is synthesized by the kidney and stimulates the proliferation and maturation of bone marrow erythroid precursor cells. Circulating Epo is a 165 amino acid glycoprotein. The Epo receptor, EpoR, is a glycoprotein expressed on megakaryocytes, erythroid progenitors and endothelial cells. Overexpression of Epo is associated with several pathophysiological conditions, such as polycythemias vera, which is caused by the Epo-independent growth of erythrocytic progenitors from abnormal stem cells. A deficiency in Epo expression has been associated with afflictions such as anemia of chronic disease (ACD), frequently found in rheumatoid arthritis (RA) patients.

CHROMOSOMAL LOCATION

Genetic locus: EPO (human) mapping to 7q22.1; Epo (mouse) mapping to 5 G2.

SOURCE

Epo (B-4) is a mouse monoclonal antibody raised against amino acids 28-189 of mature erythropoietin (Epo) of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Epo (B-4) is available conjugated to agarose (sc-5290 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-5290 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-5290 PE), fluorescein (sc-5290 FITC), Alexa Fluor® 488 (sc-5290 AF488), Alexa Fluor® 546 (sc-5290 AF546), Alexa Fluor® 594 (sc-5290 AF594) or Alexa Fluor® 647 (sc-5290 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-5290 AF680) or Alexa Fluor® 790 (sc-5290 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Epo (B-4) is recommended for detection of Epo of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Epo siRNA (h): sc-37220, Epo siRNA (m): sc-37221, Epo siRNA (r): sc-270111, Epo shRNA Plasmid (h): sc-37220-SH, Epo shRNA Plasmid (m): sc-37221-SH, Epo shRNA Plasmid (r): sc-270111-SH, Epo shRNA (h) Lentiviral Particles: sc-37220-V, Epo shRNA (m) Lentiviral Particles: sc-37221-V and Epo shRNA (r) Lentiviral Particles: sc-270111-V.

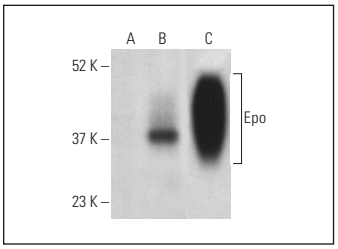
Molecular Weight of Epo: 37 kDa.

Positive Controls: mouse liver extract: sc-2256.

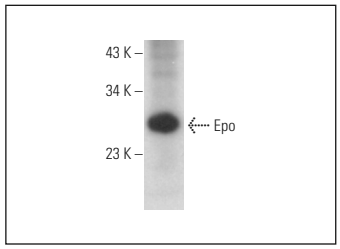
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



Epo (B-4): sc-5290. Western blot analysis of Epo expression in non-transfected HEK293T (**A**) and human Epo transfected HEK293T (**B**) whole cell lysates and human recombinant Epo (**C**).



Epo (B-4): sc-5290. Western blot analysis of Epo expression in mouse liver tissue extract.

SELECT PRODUCT CITATIONS

1. Michael, A., et al. 2007. Prognostic significance of erythropoietin expression in human renal cell carcinoma. BJU Int. 100: 291-294.
2. Hopkins, D., et al. 2011. Elimination of β-mannose glycan structures in *Pichia pastoris*. Glycobiology 21: 1616-1626.
3. Aehle, M., et al. 2012. Increasing batch-to-batch reproducibility of CHO-cell cultures using a model predictive control approach. Cytotechnology 64: 623-634.
4. Surendarbabu, M. and Meenakshisundaram, S. 2013. Human ubiquitin C promoter based expression of erythropoietin in CHO K1 cell lines: a simple transfectants screening approach. Anim. Biotechnol. 24: 198-209.
5. Zhang, J., et al. 2018. Renoprotective effect of erythropoietin via modulation of the Stat6/MAPK/NFκB pathway in ischemia/reperfusion injury after renal transplantation. Int. J. Mol. Med. 41: 25-32.
6. Li, J., et al. 2020. HIF-1α attenuates neuronal apoptosis by upregulating EPO expression following cerebral ischemia-reperfusion injury in a rat MCAO model. Int. J. Mol. Med. 45: 1027-1036.
7. Hodrea, J., et al. 2020. Reduced O-GlcNAcylation and tubular hypoxia contribute to the antifibrotic effect of SGLT2 inhibitor dapagliflozin in the diabetic kidney. Am. J. Physiol. Renal Physiol. 318: F1017-F1029.
8. Yasuoka, Y., et al. 2020. Erythropoietin production by the kidney and the liver in response to severe hypoxia evaluated by Western Blotting with deglycosylation. Physiol. Rep. 8: e14485.
9. Voss, S.C., et al. 2021. Horseradish-peroxidase-conjugated anti-erythropoietin antibodies for direct recombinant human erythropoietin detection: proof of concept. Drug Test. Anal. 13: 529-538.

RESEARCH USE

For research use only, not for use in diagnostic procedures.