SANTA CRUZ BIOTECHNOLOGY, INC.

Epo (7D10): sc-80995

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 also been shown to play a role in primitive embryonic erythropoiesis. Epo 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.

REFERENCES

1. Jelkmann, W. 1992. Erythropoietin: structure, control of production, and function. Physiol. Rev. 72: 449-489.
2. Dai, C.H., et al. 1992. Polycythemia vera. II. Hypersensitivity of bone marrow erythroid, granulocyte-macrophage, and megakaryocyte progenitor cells to interleukin-3 and granulocyte-macrophage colony-stimulating factor. Blood 80: 891-899.
3. Takahashi, T., et al. 1995. Characterization of three erythropoietin (Epo)-binding proteins in various human Epo-responsive cell lines and in cells transfected with human Epo-receptor cDNA. Blood 85: 106-114.

CHROMOSOMAL LOCATION

Genetic locus: EPO (human) mapping to 7q22.1.

SOURCE

Epo (7D10) is a mouse monoclonal antibody raised against recombinant Epo of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Epo (7D10) is recommended for detection of Epo of 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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

Molecular Weight of Epo: 37 kDa.

Positive Controls: human hepatoma whole cell lysate.

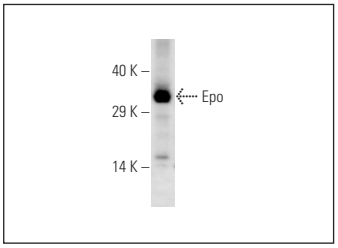
RESEARCH USE

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

STORAGE

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

DATA



Epo (7D10): sc-80995. Western blot analysis of Epo expression in human hepatoma whole cell lysate.

SELECT PRODUCT CITATIONS

1. Abhold, E., et al. 2011. Recombinant human erythropoietin promotes the acquisition of a malignant phenotype in head and neck squamous cell carcinoma cell lines *in vitro*. BMC Res. Notes 4: 553.
2. Li, J., et al. 2015. Effect of SDF-1/CXCR4 axis on the migration of transplanted bone mesenchymal stem cells mobilized by erythropoietin toward lesion sites following spinal cord injury. Int. J. Mol. Med. 36: 1205-1214.
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4. Nag, S. and Resnick, A. 2017. Stabilization of hypoxia inducible factor by cobalt chloride can alter renal epithelial transport. Physiol. Rep. 5: e13531.
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. Greenwald, A.C., et al. 2019. VEGF expands erythropoiesis via hypoxia-independent induction of erythropoietin in noncanonical perivascular stromal cells. J. Exp. Med. 216: 215-230.
7. Yang, J.T., et al. 2021. Docosahexaenoic acid suppresses expression of adipogenic tetranectin through sterol regulatory element-binding protein and forkhead box O protein in pigs. Nutrients 13: 2315.
8. Latorre, Y., et al. 2023. Engineering of Chinese hamster ovary cells for co-overexpressing MYC and XBP1s increased cell proliferation and recombinant EPO production. Sci. Rep. 13: 1482.
9. Yasuoka, Y., et al. 2023. Progress in the detection of erythropoietin in blood, urine, and tissue. Molecules 28: 4446.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.