SANTA CRUZ BIOTECHNOLOGY, INC.

p-EpoR (Tyr 456)-R: sc-20236-R

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Erythropoiesis is regulated through the interaction of erythropoietin (Epo) with its receptor, EpoR, a member of the cytokine superfamily of receptors. The human EpoR is a 507 amino acid transmembrane protein that forms homodimers following erythropoietin activation and is related to the interleukin 2 (IL-2) receptor β-chain subunit (IL-2Rβ). EpoR and IL-2Rβ share 45% amino acid identity within the box 1 and box 2 domains of their cytoplasmic regions while their remaining cytoplasmic sequences are highly divergent. These conserved domains are both required and sufficient for mitogenesis and for coupling ligand binding to the induction of tyrosine phosphorylation. Epo and IL-3 stimulate activation of the JAK2 tyrosine kinase and induce tyrosine phosphorylation and activation of Stat5. Epo or IL-3 stimulation induces binding of Stat5 to the tyrosine-phosphorylated EpoR or IL-3Rβ subunit, respectively, in IL-3-dependent 32D cells expressing the EpoR. Tyr 454 is required for PTPN6 interaction and Tyr 426 for PTPN11. Tyr 426 is also required for SOCS3 binding, but Tyr 454/Tyr 456 motif is the preferred binding site.

REFERENCES

1. Bazan, J.F. 1990. Structural design and molecular evolution of a cytokine receptor superfamily. Proc. Natl. Acad. Sci. USA 87: 6934-6938.
2. D'Andrea, A.D., et al. 1991. The cytoplasmic region of the erythropoietin receptor contains nonoverlapping positive and negative growth-regulatory domains. Mol. Cell. Biol. 11: 1980-1987.
3. Murakami, M., et al. 1991. Critical cytoplasmic region of the interleukin-6 signal transducer gp130 is conserved in the cytokine receptor family. Proc. Natl. Acad. Sci. USA 88: 11349-11353.
4. Miura, O., et al. 1993. Inactivation of erythropoietin receptor function by point mutations in a region having homology with other cytokine receptors. Mol. Cell. Biol. 13: 1788-1795.
5. Youssoufian, H., et al. 1993. Structure, function and activation of the erythropoietin receptor. Blood 81: 2223-2236.

CHROMOSOMAL LOCATION

Genetic locus: EPOR (human) mapping to 19p13.2; Epor (mouse) mapping to 9 A3.

SOURCE

p-EpoR (Tyr 456)-R is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Tyr 456 of EpoR of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-20236 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

p-EpoR (Ty 456)-R is recommended for detection of Tyr 456 phosphorylated EpoR 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).

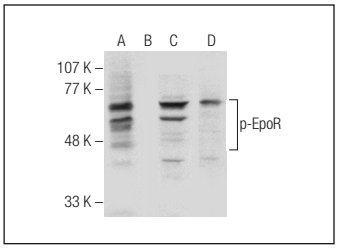
p-EpoR (Ty 456)-R is also recommended for detection of correspondingly phosphorylated EpoR in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for EpoR siRNA (h): sc-37092, EpoR siRNA (m): sc-39959, EpoR shRNA Plasmid (h): sc-37092-SH, EpoR shRNA Plasmid (m): sc-39959-SH, EpoR shRNA (h) Lentiviral Particles: sc-37092-V and EpoR shRNA (m) Lentiviral Particles: sc-39959-V.

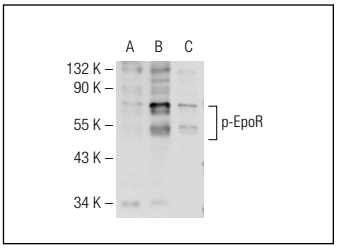
Molecular Weight of p-EpoR: 64-78 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, GM-CSF-treated K-562 whole cell lysate or Jurkat + GM-CSF cell lysate: sc-2279.

DATA



Western blot analysis of EpoR phosphorylation in untreated (**A**,**C**) and lambda protein phosphatase (sc-200312A) treated (**B**,**D**) TF-1 whole cell lysates. Antibodies tested include p-EpoR (Tyr 456)-R: sc-20236-R (**A**,**B**) and EpoR (C-20): sc-695 (**C**,**D**).



p-EpoR (Tyr 456)-R: sc-20236-R. Western blot analysis of EpoR phosphorylation in untreated (**A**) GMCSF treated (**B**) and GMCSF and lambda protein phosphatase (sc-200312A) treated (**C**) K-562 whole cell lysates.

SELECT PRODUCT CITATIONS

1. Paragh, G., et al. 2009. RNA interference-mediated inhibition of erythropoietin receptor expression suppresses tumor growth and invasiveness in A2780 human ovarian carcinoma cells. Am. J. Pathol. 174: 1504-1514.

RESEARCH USE

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

PROTOCOLS

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