SANTA CRUZ BIOTECHNOLOGY, INC.

EpoR (W-20): sc-82593

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. The membrane proximal region is also required for the association of JAK2 with EpoR. The existence of multiple cross-linked complexes and differential ligand affinities suggests that EpoR may exist as a multireceptor complex.

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. Youssoufian, H., et al. 1993. Structure, function and activation of the erythropoietin receptor. Blood 81: 2223-2236.
5. 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.
6. Watowich, S.S., et al. 1994. Activation and inhibition of erythropoietin receptor function: role of receptor dimerization. Mol. Cell. Biol. 14: 3535-3549.
7. Takahashi, T., et al. 1995. Charac-terization of three erythropoietin (Epo)-binding proteins with various human Epo-responsive cell lines and in cells transfected with human Epo-receptor cDNA. Blood 85: 106-114.
8. Elliott, S., et al. 2006. Anti-Epo receptor antibodies do not predict Epo receptor expression. Blood 107: 1892-1895.

CHROMOSOMAL LOCATION

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

SOURCE

EpoR (W-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of EpoR of human origin.

STORAGE

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

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-82593 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

EpoR (W-20) is recommended for detection of EpoR of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

EpoR (W-20) is also recommended for detection of EpoR in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for EpoR siRNA (h): sc-37092, EpoR siRNA (m): sc-39959, EpoR siRNA (r): sc-77364, EpoR shRNA Plasmid (h): sc-37092-SH, EpoR shRNA Plasmid (m): sc-39959-SH, EpoR shRNA Plasmid (r): sc-77364-SH, EpoR shRNA (h) Lentiviral Particles: sc-37092-V, EpoR shRNA (m) Lentiviral Particles: sc-39959-V and EpoR shRNA (r) Lentiviral Particles: sc-77364-V.

Molecular Weight of EpoR: 64-78 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203 or Jurkat whole cell lysate: sc-2204.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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.