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EPOR Rabbit pAb

Catalog # AP98493

Product Information

Application	WB, IHC-P, IHC-F, IF
Primary Accession	P19235
Other Accession	P19235
Reactivity	Rat, Human
Predicted	Mouse, Dog, Horse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	55065
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human EPOR
Epitope Specificity	301-450/508
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the type I cytokine receptor family. Type 1 subfamily. Contains 1 fibronectin type-III domain.
SUBUNIT	Forms homodimers on EPO stimulation. The tyrosine-phosphorylated form interacts with several SH2 domain-containing proteins including LYN, the adapter protein APS, PTPN6, PTPN11, JAK2, PI3 kinases, STAT5A/B, SOCS3, CRKL. Interacts with INPP5D/SHIP1. The N-terminal SH2 domain of PTPN6 binds Tyr-454 and inhibits signaling through dephosphorylation of JAK2. APS binding also inhibits the JAK-STAT signaling. Binding to PTPN11, preferentially through the N-terminal SH2 domain, promotes mitogenesis and phosphorylation of PTPN11. Binding of JAK2 (through its N-terminal) promotes cell-surface expression. Interaction with the ubiquitin ligase NOSIP mediates EPO-induced cell proliferation. Interacts with ATXN2L.
Post-translational modifications	On EPO stimulation, phosphorylated on C-terminal tyrosine residues by JAK2. The phosphotyrosine motifs are also recruitment sites for several SH2-containing proteins and adapter proteins which mediate cell proliferation. Phosphorylation on Tyr-454 is required for PTPN6 interaction, Tyr-426 for PTPN11. Tyr-426 is also required for SOCS3 binding, but Tyr-454/Tyr-456 motif is the preferred binding site. Ubiquitinated by NOSIP; appears to be either multi-monoubiquitinated or polyubiquitinated. Ubiquitination mediates proliferation and survival of EPO-dependent cells.
DISEASE	Defects in EPOR are the cause of erythrocytosis familial type 1 (ECYT1) [MIM:133100]. ECYT1 is an autosomal dominant disorder characterized by increased serum red blood cell mass, elevated hemoglobin and hematocrit, hypersensitivity of erythroid progenitors to erythropoietin, erythropoietin low serum levels, and no increase in platelets nor leukocytes. It has a relatively benign course and does not progress to leukemia.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	The erythropoietin receptor (EPOR) is a member of the cytokine receptor family. There are several isoforms including: EPOR-F (full length), EPOR-S (soluble form), and EPOR-T (truncated form). Upon erythropoietin (EPO)

binding, the EPOR activates Jak2 tyrosine kinase which activates different intracellular pathways including: Ras/MAP kinase, phosphatidylinositol 3-kinase and STAT transcription factors. The stimulated EPOR appears to have a role in erythroid cell survival. Defects in the EPOR may produce erythroleukemia and familial erythrocytosis. A functional EPOR is found in the cardiovascular system, including endothelial cells and cardiomyocytes, and data suggest that the EPO/EPO receptor system plays an important role in cardiac function. In animal studies, treatment with EPO during ischemia/reperfusion in the heart has been shown to limit the infarct size and the extent of apoptosis.

Additional Information

Gene ID	2057
Other Names	EPO-R; EPOR_HUMAN; EPOR; EPOR_MOUSE; EPOR_RAT; erythropoietin receptor
Dilution	WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	EPOR {ECO:0000303|PubMed:2163695, ECO:0000312|HGNC:HGNC:3416}
Function	Receptor for erythropoietin, which mediates erythropoietin- induced erythroblast proliferation and differentiation (PubMed:10388848, PubMed:2163695, PubMed:2163696, PubMed:8662939, PubMed:9774108). Upon EPO stimulation, EPOR dimerizes triggering the JAK2/STAT5 signaling cascade (By similarity). In some cell types, can also activate STAT1 and STAT3 (PubMed:11756159). May also activate the LYN tyrosine kinase (By similarity).
Cellular Location	Cell membrane {ECO:0000250|UniProtKB:P14753}; Single-pass type I membrane protein
Tissue Location	Erythroid cells and erythroid progenitor cells. [Isoform EPOR-S]: Isoform EPOR-S and isoform EPOR-T are the predominant forms in bone marrow.

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