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BLVRB Antibody (Center)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP20044c

Product Information

Application	WB, E
Primary Accession	P30043
Other Accession	NP_000704.1
Reactivity	Human
Predicted	Mouse, Rat, Bovine, Canine, Rabbit
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB42218
Calculated MW	22119
Antigen Region	119-146

Additional Information

Gene ID	645
Other Names	Flavin reductase (NADPH), FR, Biliverdin reductase B, BVR-B, Biliverdin-IX beta-reductase, Green heme-binding protein, GHBP, NADPH-dependent diaphorase, NADPH-flavin reductase, FLR, BLVRB, FLR
Target/Specificity	This BLVRB antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 119-146 amino acids from the Central region of human BLVRB.
Dilution	WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	BLVRB Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	BLVRB (HGNC:1063)
Function	Enzyme that can both act as a NAD(P)H-dependent reductase and a

	S-nitroso-CoA-dependent nitrosyltransferase (PubMed:10620517, PubMed:18241201, PubMed:27207795, PubMed:38056462, PubMed:7929092). Promotes fetal heme degradation during development (PubMed:10858451, PubMed:18241201, PubMed:7929092). Also expressed in adult tissues, where it acts as a regulator of hematopoiesis, intermediary metabolism (glutaminolysis, glycolysis, TCA cycle and pentose phosphate pathway) and insulin signaling (PubMed:27207795, PubMed:29500232, PubMed:38056462). Has a broad specificity oxidoreductase activity by catalyzing the NAD(P)H-dependent reduction of a variety of flavins, such as riboflavin, FAD or FMN, biliverdins, methemoglobin and PQQ (pyrroloquinoline quinone) (PubMed:10620517, PubMed:18241201, PubMed:7929092). Contributes to fetal heme catabolism by catalyzing reduction of biliverdin IXbeta into bilirubin IXbeta in the liver (PubMed:10858451, PubMed:18241201, PubMed:7929092). Biliverdin IXbeta, which constitutes the major heme catabolite in the fetus is not present in adult (PubMed:10858451, PubMed:18241201, PubMed:7929092). Does not reduce bilirubin IXalpha (PubMed:10858451, PubMed:18241201, PubMed:7929092). Can also reduce the complexed Fe(3+) iron to Fe(2+) in the presence of FMN and NADPH (PubMed:10620517). Acts as a protein nitrosyltransferase by catalyzing nitrosylation of cysteine residues of target proteins, such as HMOX2, INSR and IRS1 (PubMed:38056462). S-nitroso-CoA-dependent nitrosyltransferase activity is mediated via a 'ping-pong' mechanism: BLVRB first associates with both S-nitroso-CoA and protein substrate, nitric oxide group is then transferred from S- nitroso-CoA to Cys-109 and Cys-188 residues of BLVRB and from S- nitroso-BLVRB to the protein substrate (PubMed:38056462). Inhibits insulin signaling by mediating nitrosylation of INSR and IRS1, leading to their inhibition (PubMed:38056462).
Cellular Location	Cytoplasm
Tissue Location	Predominantly expressed in liver and erythrocytes (PubMed:7929092). At lower levels in heart, lung, adrenal gland and cerebrum (PubMed:7929092). Expressed in adult red blood cells (PubMed:29932944).

Background

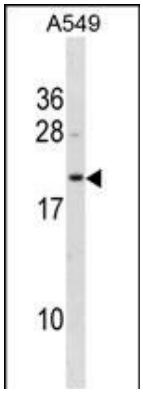
The final step in heme metabolism in mammals is catalyzed by the cytosolic biliverdin reductase enzymes A and B (EC 1.3.1.24).

References

Persson, B., et al. Chem. Biol. Interact. 178 (1-3), 94-98 (2009) :
Smith, L.J., et al. Biochem. J. 411(3):475-484(2008)
Otterbein, L.E., et al. Trends Immunol. 24(8):449-455(2003)
Wang, J., et al. J. Biol. Chem. 278(22):20069-20076(2003)
Pereira, P.J., et al. Nat. Struct. Biol. 8(3):215-220(2001)

Images

BLVRB Antibody (Center) (Cat. #AP20044c) western blot analysis in A549 cell line lysates (35ug/lane).This demonstrates the BLVRB antibody detected the BLVRB protein (arrow).



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