10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

P4HB Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP2911b

Product Information

Application	WB, IHC-P, FC, E
Primary Accession	P07237
Other Accession	P04785, P09103, Q8R4U2, P05307
Reactivity	Human
Predicted	Bovine, Hamster, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB20830
Calculated MW	57116
Antigen Region	436-464

Additional Information

Gene ID	5034
Other Names	Protein disulfide-isomerase, PDI, Cellular thyroid hormone-binding protein, Prolyl 4-hydroxylase subunit beta, p55, P4HB, ERBA2L, PDI, PDIA1, PO4DB
Target/Specificity	This P4HB antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 436-464 amino acids from the C-terminal region of human P4HB.
Dilution	WB~~1:1000 IHC-P~~1:100~500 FC~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
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	P4HB Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	P4HB
Synonyms	ERBA2L, PDI, PDIA1, PO4DB

Function	This multifunctional protein catalyzes the formation, breakage and rearrangement of disulfide bonds. At the cell surface, seems to act as a reductase that cleaves disulfide bonds of proteins attached to the cell. May therefore cause structural modifications of exofacial proteins. Inside the cell, seems to form/rearrange disulfide bonds of nascent proteins. At high concentrations and following phosphorylation by FAM20C, functions as a chaperone that inhibits aggregation of misfolded proteins (PubMed:32149426). At low concentrations, facilitates aggregation (anti-chaperone activity). May be involved with other chaperones in the structural modification of the TG precursor in hormone biogenesis. Also acts as a structural subunit of various enzymes such as prolyl 4-hydroxylase and microsomal triacylglycerol transfer protein MTTP. Receptor for LGALS9; the interaction retains P4HB at the cell surface of Th2 T helper cells, increasing disulfide reductase activity at the plasma membrane, altering the plasma membrane redox state and enhancing cell migration (PubMed:21670307).
Cellular Location	Endoplasmic reticulum. Endoplasmic reticulum lumen. Melanosome. Cell membrane; Peripheral membrane protein. Note=Highly abundant. In some cell types, seems to be also secreted or associated with the plasma membrane, where it undergoes constant shedding and replacement from intracellular sources (Probable). Localizes near CD4-enriched regions on lymphoid cell surfaces (PubMed:11181151). Identified by mass spectrometry in melanosome fractions from stage I to stage IV (PubMed:10636893) Colocalizes with MTTP in the endoplasmic reticulum (PubMed:23475612) {ECO:0000269|PubMed:10636893, ECO:0000269|PubMed:11181151, ECO:0000269|PubMed:23475612, ECO:0000305}

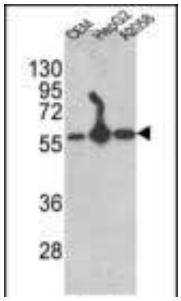
Background

P4HB is a highly abundant multifunctional enzyme that belongs to the protein disulfide isomerase family. When present as a tetramer consisting of two alpha and two beta subunits, this enzyme is involved in hydroxylation of prolyl residues in preprocollagen. This enzyme is also a disulfide isomerase containing two thioredoxin domains that catalyze the formation, breakage and rearrangement of disulfide bonds. Other known functions include its ability to act as a chaperone that inhibits aggregation of misfolded proteins in a concentration-dependent manner, its ability to bind thyroid hormone, its role in both the influx and efflux of S-nitrosothiol-bound nitric oxide, and its function as a subunit of the microsomal triglyceride transfer protein complex.

References

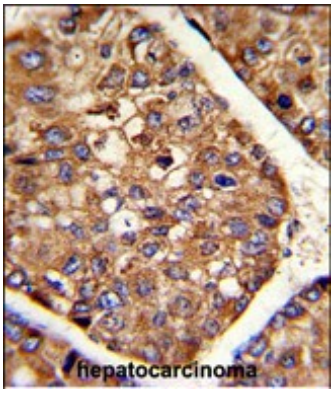
Ewing,R.M., et.al., Mol. Syst. Biol. 3, 89 (2007)

Images

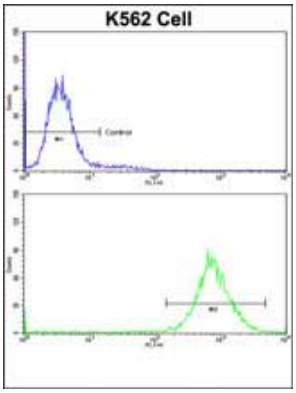


Western blot analysis of P4HB Antibody (C-term) (Cat. #AP2911b) in CEM,HepG2,A2058 cell line lysates (35ug/lane). P4HB (arrow) was detected using the purified Pab.(2ug/ml)

Formalin-fixed and paraffin-embedded human hepatocarcinoma reacted with P4HB Antibody (C-term),



which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.



Flow cytometric analysis of K562 cells using P4HB Antibody (C-term)(bottom histogram) compared to a negative control cell (top histogram)FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

Citations

- LMAN1 (ERGIC-53) promotes trafficking of neuroreceptors.