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PLOD1 Antibody (N-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP12656c

Product Information

Application	WB, IHC-P, FC, E
Primary Accession	Q02809
Other Accession	Q9R0E2, NP_000293.2
Reactivity	Human, Rat, Mouse
Predicted	Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB30211
Calculated MW	83550
Antigen Region	66-94

Additional Information

Gene ID	5351
Other Names	Procollagen-lysine, 2-oxoglutarate 5-dioxygenase 1, Lysyl hydroxylase 1, LH1, PLOD1, LLH, PLOD
Target/Specificity	This PLOD1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 66-94 amino acids from the N-terminal region of human PLOD1.
Dilution	WB~~1:1000 IHC-P~~1:100~500 FC~~1:25 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.05% (V/V) Proclin 300. 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	PLOD1 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PLOD1
Synonyms	LLH, PLOD

Function	Part of a complex composed of PLOD1, P3H3 and P3H4 that catalyzes hydroxylation of lysine residues in collagen alpha chains and is required for normal assembly and cross-linkling of collagen fibrils (By similarity). Forms hydroxylysine residues in -Xaa-Lys- Gly- sequences in collagens (PubMed:10686424, PubMed:15854030, PubMed:8621606). These hydroxylysines serve as sites of attachment for carbohydrate units and are essential for the stability of the intermolecular collagen cross-links (Probable).
Cellular Location	Rough endoplasmic reticulum membrane; Peripheral membrane protein; Lumenal side

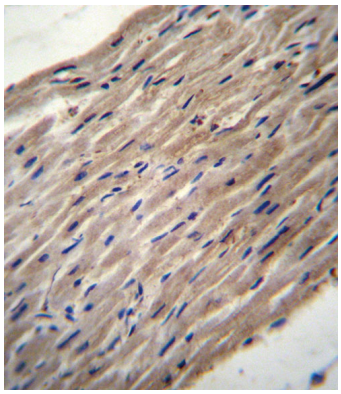
Background

Lysyl hydroxylase is a membrane-bound homodimeric protein localized to the cisternae of the endoplasmic reticulum. The enzyme (cofactors iron and ascorbate) catalyzes the hydroxylation of lysyl residues in collagen-like peptides. The resultant hydroxylysyl groups are attachment sites for carbohydrates in collagen and thus are critical for the stability of intermolecular crosslinks. Some patients with Ehlers-Danlos syndrome type VI have deficiencies in lysyl hydroxylase activity.

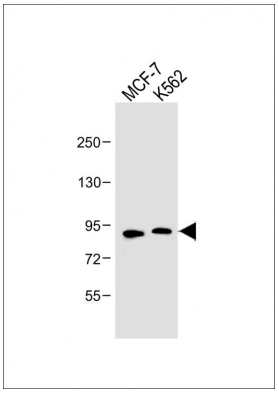
References

Johnatty, S.E., et al. PLoS Genet. 6 (7), E1001016 (2010) :
Huang, Q.Y., et al. Bone 44(5):984-988(2009)
Yamada, Y., et al. Int. J. Mol. Med. 19(5):791-801(2007)
Tasker, P.N., et al. Osteoporos Int 17(7):1078-1085(2006)
Giunta, C., et al. Mol. Genet. Metab. 86 (1-2), 269-276 (2005) :

Images

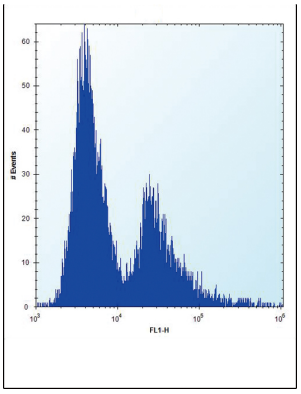


PLOD1 Antibody (N-term) (Cat. #AP12656c)immunohistochemistry analysis in formalin fixed and paraffin embedded human heart tissue followed by peroxidase conjugation of the secondary antibody and DAB staining.This data demonstrates the use of PLOD1 Antibody (N-term) for immunohistochemistry. Clinical relevance has not been evaluated.



All lanes : Anti-PLOD1 Antibody (N-term) at 1:1000 dilution Lane 1: MCF-7 whole cell lysate Lane 2: K562 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 84 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

PLOD1 Antibody (N-term) (Cat. #AP12656c) flow



cytometric analysis of U251 cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

Citations

- Absence of the ER Cation Channel TMEM38B/TRIC-B Disrupts Intracellular Calcium Homeostasis and Dysregulates Collagen Synthesis in Recessive Osteogenesis Imperfecta.
- MBTPS2 mutations cause defective regulated intramembrane proteolysis in X-linked osteogenesis imperfecta.
- Impaired collagen biosynthesis and cross-linking in aorta of patients with bicuspid aortic valve.