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LOXL2 Antibody (C-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP16131b

Product Information

Application	WB, E
Primary Accession	Q9Y4K0
Other Accession	B5DF27, P58022, E1C3U7, A6H737, NP_002309.1
Reactivity	Human
Predicted	Mouse, Rat, Chicken, Bovine, Canine, Rabbit
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB35313
Calculated MW	86725
Antigen Region	589-617

Additional Information

Gene ID	4017
Other Names	Lysyl oxidase homolog 2, Lysyl oxidase-like protein 2, Lysyl oxidase-related protein 2, Lysyl oxidase-related protein WS9-14, LOXL2
Target/Specificity	This LOXL2 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 589-617 amino acids from the C-terminal region of human LOXL2.
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	LOXL2 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	LOXL2
Function	Mediates the post-translational oxidative deamination of lysine residues on target proteins leading to the formation of deaminated lysine (allysine)

	(PubMed:27735137). Acts as a transcription corepressor and specifically mediates deamination of trimethylated 'Lys-4' of histone H3 (H3K4me3), a specific tag for epigenetic transcriptional activation (PubMed:27735137). Shows no activity against histone H3 when it is trimethylated on 'Lys-9' (H3K9me3) or 'Lys-27' (H3K27me3) or when 'Lys-4' is monomethylated (H3K4me1) or dimethylated (H3K4me2) (PubMed:27735137). Also mediates deamination of methylated TAF10, a member of the transcription factor IID (TFIID) complex, which induces release of TAF10 from promoters, leading to inhibition of TFIID-dependent transcription (PubMed:25959397). LOXL2-mediated deamination of TAF10 results in transcriptional repression of genes required for embryonic stem cell pluripotency including POU5F1/OCT4, NANOG, KLF4 and SOX2 (By similarity). Involved in epithelial to mesenchymal transition (EMT) via interaction with SNAI1 and participates in repression of E-cadherin CDH1, probably by mediating deamination of histone H3 (PubMed:16096638, PubMed:24414204, PubMed:27735137). During EMT, involved with SNAI1 in negatively regulating pericentromeric heterochromatin transcription (PubMed:24239292). SNAI1 recruits LOXL2 to pericentromeric regions to oxidize histone H3 and repress transcription which leads to release of heterochromatin component CBX5/HP1A, enabling chromatin reorganization and acquisition of mesenchymal traits (PubMed:24239292). Interacts with the endoplasmic reticulum protein HSPA5 which activates the IRE1-XBP1 pathway of the unfolded protein response, leading to expression of several transcription factors involved in EMT and subsequent EMT induction (PubMed:28332555). Involved in E-cadherin repression following hypoxia, a hallmark of EMT believed to amplify tumor aggressiveness, suggesting that it may play a role in tumor progression (PubMed:20026874). When secreted into the extracellular matrix, promotes cross-linking of extracellular matrix proteins by mediating oxidative deamination of peptidyl lysine residues in precursors to fibrous collagen and elastin (PubMed:20306300). Acts as a regulator of sprouting angiogenesis, probably via collagen IV scaffolding (PubMed:21835952). Acts as a regulator of chondrocyte differentiation, probably by regulating expression of factors that control chondrocyte differentiation (By similarity).
Cellular Location	Secreted, extracellular space, extracellular matrix, basement membrane. Nucleus. Chromosome. Endoplasmic reticulum. Note=Associated with chromatin (PubMed:27735137). It is unclear how LOXL2 is nuclear as it contains a signal sequence and has been shown to be secreted (PubMed:23319596) However, a number of reports confirm its intracellular location and its key role in transcription regulation (PubMed:22204712, PubMed:22483618).
Tissue Location	Expressed in many tissues (PubMed:10212285). Highest expression in reproductive tissues, placenta, uterus and prostate (PubMed:10212285). In esophageal epithelium, expressed in the basal, prickle and granular cell layers (PubMed:22204712). Up-regulated in a number of cancers cells and tissues.

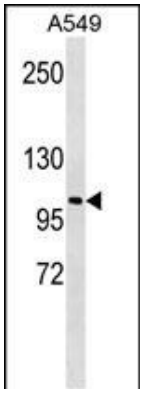
Background

This gene encodes a member of the lysyl oxidase gene family. The prototypic member of the family is essential to the biogenesis of connective tissue, encoding an extracellular copper-dependent amine oxidase that catalyses the first step in the formation of crosslinks in collagens and elastin. A highly conserved amino acid sequence at the C-terminus end appears to be sufficient for amine oxidase activity, suggesting that each family member may retain this function. The N-terminus is poorly conserved and may impart additional roles in developmental regulation, senescence, tumor suppression, cell growth control, and chemotaxis to each member of the family.

References

Rodriguez, H.M., et al. J. Biol. Chem. 285(27):20964-20974(2010)
Ruckert, F., et al. Int J Colorectal Dis 25(3):303-311(2010)
Schietke, R., et al. J. Biol. Chem. 285(9):6658-6669(2010)
Sano, M., et al. Int. J. Oncol. 36(2):321-330(2010)
Kim, Y., et al. Oncol. Rep. 22(4):799-804(2009)

Images



LOXL2 Antibody (C-term) (Cat. #AP16131b) western blot analysis in A549 cell line lysates (35ug/lane).This demonstrates the LOXL2 antibody detected the LOXL2 protein (arrow).

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.