

# LOXL2 Antibody (C-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab) Catalog # AP16131b

#### **Product Information**

Application WB, E
Primary Accession Q9Y4K0

Other Accession <u>B5DF27</u>, <u>P58022</u>, <u>E1C3U7</u>, <u>A6H737</u>, <u>NP\_002309.1</u>

Reactivity Human

**Predicted** Mouse, Rat, Chicken, Bovine

HostRabbitClonalityPolyclonalIsotypeRabbit IgGClone NamesRB35313Calculated MW86725Antigen Region589-617

#### **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: <u>27735137</u>). 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.

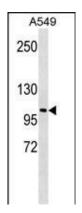
## Background

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'.