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LOXL2 Antibody (C-term) Blocking Peptide

Synthetic peptide
Catalog # BP16131b

Specification

LOXL2 Antibody (C-term) Blocking Peptide - Product Information

Primary Accession Q9Y4K0

LOXL2 Antibody (C-term) Blocking Peptide - 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

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

LOXL2 Antibody (C-term) Blocking Peptide - 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:<a href="http://www.uniprot.org/citations/16096638"

target="_blank">16096638, PubMed:27735137, PubMed:24414204). 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.

LOXL2 Antibody (C-term) Blocking Peptide - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Blocking Peptides

LOXL2 Antibody (C-term) Blocking Peptide - Images

LOXL2 Antibody (C-term) Blocking Peptide - Background

This gene encodes a member of the lysyl oxidase genefamily. The prototypic member of the family is essential to thebiogenesis of connective tissue, encoding an extracellularcopper-dependent amine oxidase that catalyses the first step in theformation of crosslinks in collagens and elastin. A highlyconserved amino acid sequence at the C-terminus end appears to besufficient for amine oxidase activity, suggesting that each familymember may retain this function. The N-terminus is poorly conservedand may impart additional roles in developmental regulation,senescence, tumor suppression, cell growth control, and chemotaxisto each member of the family.

LOXL2 Antibody (C-term) Blocking Peptide - 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)