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Antibodies for Developmental biology Research.

Anti-Lysyl oxidase Like protein 1 (LOXL1) (Cat # LOXL-101AP)

Alternate nomenclature/Accession #: Lysyl oxidase like Protein 1

Elastic fibers provide tissues with elasticity which is critical to the function of arteries, lungs, skin, and other dynamic organs. Loss of elasticity is a major contributing factor in aging and diseases. However, the mechanism of elastic fiber development and assembly is poorly understood. Lysyl oxidases are extracellular copper-dependent enzymes that catalyzing the formation of lysine and hydroxylysine-derived cross-links in collagens and lysine-derived cross-links in elastin. These cross-links are essential for the tensile strength of collagens and the rubber-like properties of elastin, both abundant extracellular matrix proteins that are necessary for the structural integrity and function of connective tissues. Lysyl oxidases (LOX) are involved in cross linking of elastin and collagens and the LOX family comprise of LOX and 4 LOX-like enzymes, all are likely to catalyze cross-linked formation in collagens and elastin. The specific functions associated with these isoforms are not completely understood at present. The LOX are essential and crucial for development of the cardiovascular system and LOX null mice died prenatally of aortic aneurysms and cardiovascular dysfunction (1). LOX family members are also essential for respiratory system and the integrity of elastic and collagen fibers in the lungs and skin.

Lysyl oxidase catalyzes the reaction that generates peptidyl- δ -hydroxy- α -amino adipic- δ -semialdehyde and peptidyl- α -amino adipic- δ -semialdehyde from hydroxylysine and lysine residues which is the final enzymatic reaction required for collagen cross linking. The newly formed aldehydes formed by these enzymatic reaction then spontaneously react with other aldehydes, unmodified lysine and hydroxylysine to form a variety of intra and inter molecular cross links that are found in collagens and elastins (2). Lysyl oxidase is a copper-dependent amine oxidase. It is secreted from fibrogenic cells as a pro-enzyme that appears to have little or no enzyme activity, and is processed in the extracellular environment to produce the active 32 kDa enzyme and an 18 kDa propeptide (3). LOXL1 is a 608aa (605in mouse and 400 in human) protein. Antibodies raised against LOXL1 strongly reacted with a 90kDa protein and a 34 kDa smaller subunit essentially the active LOX subunit in PC-LOXL1 samples. The 400 amino acid sequence in human is processed by cleavage of 207 amino acids form the N-terminal.

FabGennix has made rabbit anti-lysyl oxidase like 1 (LOXL1) antibodies using peptide taken from near the carboxy-terminal end of the protein. The LOXL1-selective antibodies were generated against synthetic peptides from unique regions of the LOXL1 protein. The antigenic peptide was post-synthetically covalently modified to achieve the desired antigenicity before using it as immunogen to immunize rabbits. The rabbit antibodies obtained were isolated and purified on an immobilized antigen based affinity matrix before stabilizing them in antibody stabilization buffer. The antibodies to LOXL1 label LOXL1 full length and active subunit as 91kDa and 32 kDa bands in PC-LOXL1 samples. FabGennix Inc. provides Western blot positive controls for LOXL1 in ready-to-use buffer for SDS-PAGE and western blotting applications. Limited quantities of antigenic blocking peptides for this antibody are also available (Inquire before placing orders). For a complete listing of all cycle cycle and mitosis related antibodies, visit our website at www.FabGennix.com.

Catalog #	Description	Host	Cross reactivity	Qty
LOXL-101AP	Anti-Lysyl oxidase like 1(LOXL1) Antibody	Rabbit	Human	100 ug
P-LOXL1	Antigenic blocking peptide for LOXL-101AP	Rabbit	n/a	250ug
PC-LOXL1	Western blot positive control for LOXL1	Partially purified protein	n/a	For 5 appl

R = rat, M = mouse; H = humans; R = rabbit * Actual volume is 103-110 μ l, WB, Western Blot analyses; IMM, Immunoprecipitation; IHC, Immunohistochemistry, n.d, not determine.

Immunogen: LOXL1 antibodies are developed against conserved antigenic peptide sequence corresponding to aa 570-590 of the rat LOXL1 gene. The peptide was covalently modified to achieve desired antigenicity before used as antigen.

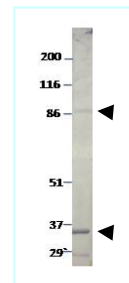
Concentration: Antibodies to LOXL1 (LOXL-101AP) was purified on immobilized antigen based affinity chromatography purified immunoglobulin concentration was 0.63-0.66mg/ml in antibody stabilization buffer.

Applications: ELISA/dot blot: Antibody dilution 1:20,000-1:50,000; Western blot: Antibody dilution 1:500-1,000 in diluOBuffer. PC-LOXL1 sample 25ul/lane. Other applications (IHC, confocal and Immunoprecipitation for these antibodies are not yet established.

Reactivity: The antibodies to LOXL1 (LOXL-101AP) label a 91kDa and a 32kDa LOXL1 bands in PC-LOXL1 samples.

Protocols: Description and use of this antibody in various applications is provided with the product. Standard protocol for various applications (Western blot; immunoprecipitation and immunohistochemistry) of this antibody can be requested by calling our Technical support line. The recommended dilutions are for reference only and FabGennix Inc. strongly recommends investigators to optimize conditions for use of this product in their laboratories.

Form/Storage: The antiserum is supplied in antibody stabilization buffer with preservatives. For long-term storage of antibody, store at -20°C FabGennix Inc. does not recommend storage of very dilute antibody solutions unless they are prepared in specially formulated



Western blot of LOXL1 using LOXL-101AP antibody (1:500) in diluOBuffer and 25ul of PC-LOXL1. MWM are indicated on the left. Arrows indicate 91 and 32 kDa bands.

multi use antibody dilution buffer (Cat # DiluOBuffer). Working solutions of antibodies in DiluOBuffer should be filtered through 0.45um filter after every use for long-term storage.

- Notes:**
- Briefly centrifuge to collect liquid, heat or boil PC-LOXL1 tube for 1-2 minutes to dissolve any precipitate before use. This product is "ready-to-use" for electrophoresis. After thawing store at room temperature, Repeated freezing and thawing may result in appearance of higher molecular weight immunoreactive bands.
 - Now Western blots can be stripped and recycle using our specially formulated StripOBuffer (Cat # FGI-1989) up to 8 times with out any distortion and significant loss in signal to noise ratios. This stripping buffer does not require heating or have any pungent smell.

References:

- Joni M. Mäki, Raija Sormunen, et. Al., Am J Pathol. 2005 October; 167(4):
- Trackman PC, Tang J, Bedell-Hogan D, Kagan HM. J Biol Chem. 1992;267:8666-8671.
- Philip C. Trackman., Diverse Biological Functions of Extracellular Collagen Processing Enzymes. J Cell Biochem. 2005 December 1; 96(5): 927-937.

* For users who may require large amounts of LOXL-101AP, PC-LOXL1 and P-LOXL1, please enquire about bulk material discounts.
This Product is for Research Use Only and is NOT intended for use in humans or clinical diagnosis.

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