

# LOX (V-20): sc-32409

## BACKGROUND

The lysyl oxidase family of extracellular proteins includes LOX and four LOX-like enzymes, which are responsible for the deamination of peptidyl lysine residues of collagens and elastin. They also catalyze inter- and intra-cross-linking reactions. Overexpression of LOX may cause severe fibrotic degeneration due to its high resistance to degradative enzymes. Procollagen C-proteinase activity processes LOX from a precursor protein to a mature form. Activation of LOX occurs in normal developing and adult skin, and alterations in LOX expression and activity are associated with skin aging and senescence. LOX is crucial for development of the cardiovascular and respiratory systems. In addition, LOX plays a role in cancer, wound healing, cell motility, chemotaxis and differentiation.

## REFERENCES

1. Uzel, M.I., et al. 2001. Multiple bone morphogenetic protein 1-related mammalian metalloproteinases process pro-lysyl oxidase at the correct physiological site and control lysyl oxidase activation in mouse embryo fibroblast cultures. *J. Biol. Chem.* 276: 22537-22543.
2. Palamakumbura, A.H., et al. 2004. The propeptide domain of lysyl oxidase induces phenotypic reversion of Ras-transformed cells. *J. Biol. Chem.* 279: 40593-40600.
3. Maki, J.M., et al. 2005. Lysyl oxidase is essential for normal development and function of the respiratory system and for the integrity of elastic and Collagen fibers in various tissues. *Am. J. Pathol.* 167: 9279-36.
4. Goto, Y., et al. 2005. Transforming growth factor  $\beta$ -1-mediated upregulation of lysyl oxidase in the kidneys of hereditary nephrotic mouse with chronic renal fibrosis. *Virchows Arch.* 447: 859-868.
6. Szauder, K.M., et al. 2005. Lysyl oxidase in development, aging and pathologies of the skin. *Pathol. Biol.* 53: 448-456.

## CHROMOSOMAL LOCATION

Genetic locus: LOX (human) mapping to 5q23.2; Lox (mouse) mapping to 18 D1.

## SOURCE

LOX (V-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of LOX of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-32409 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## APPLICATIONS

LOX (V-20) is recommended for detection of Lysyl oxidase (LOX) of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

LOX (V-20) is also recommended for detection of Lysyl oxidase (LOX) in additional species, including canine, bovine, porcine and avian.

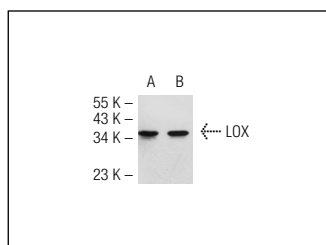
Suitable for use as control antibody for LOX siRNA (h): sc-45218, LOX siRNA (m): sc-45219, LOX shRNA Plasmid (h): sc-45218-SH, LOX shRNA Plasmid (m): sc-45219-SH, LOX shRNA (h) Lentiviral Particles: sc-45218-V and LOX shRNA (m) Lentiviral Particles: sc-45219-V.

Molecular Weight of LOX proenzyme: 50 kDa.

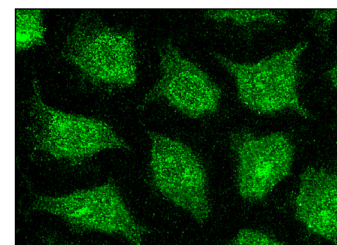
Molecular Weight of mature LOX: 30 kDa.

Positive Controls: WI 38 whole cell lysate: sc-364260, JEG-3 whole cell lysate: sc-364255 or JAR cell lysate: sc-2276.

## DATA



LOX (V-20): sc-32409. Western blot analysis of LOX expression in WI 38 (A) and JEG-3 (B) whole cell lysates.



LOX (V-20): sc-32409. Immunofluorescence staining of methanol-fixed HeLa cells showing cell surface localization.

## SELECT PRODUCT CITATIONS

1. Kumarasamy, A., et al. 2009. Lysyl oxidase activity is dysregulated during impaired alveolarization of mouse and human lungs. *Am. J. Respir. Crit. Care Med.* 180: 1239-1252.
2. Yang, Z., et al. 2010. Uric acid increases fibronectin synthesis through upregulation of lysyl oxidase expression in rat renal tubular epithelial cells. *Am. J. Physiol. Renal Physiol.* 299: F336-F346.
3. Subramaniam, D., et al. 2010. Cholesterol rich lipid raft microdomains are gateway for acute phase protein, SERPINA1. *Int. J. Biochem. Cell Biol.* 42: 1562-1570.
4. Voloshenyuk, T.G., et al. 2011. Induction of cardiac fibroblast lysyl oxidase by TGF- $\beta$ 1 requires PI3K/Akt, Smad3, and MAPK signaling. *Cytokine* 55: 90-97.
5. Giacominelli-Stuffler, R., et al. 2012. 5-lipoxygenase and cyclooxygenase-2 in the lungs of pigs naturally affected by enzootic pneumonia and porcine pleuropneumonia. *Res. Vet. Sci.* 93: 898-903.