

## LOXL2 Protein, Human (HEK293, His)

Cat. No.:	HY-P74770
Synonyms:	Lysyl oxidase homolog 2; Lysyl oxidase-related protein WS9-14; LOXL2
Species:	Human
Source:	HEK293
Accession:	Q9Y4K0 (M1-Q774)
Gene ID:	4017
Molecular Weight:	Approximately 110 kDa

### PROPERTIES

#### AA Sequence

M E R P L C S H L C	S C L A M L A L L S	P L S L A Q Y D S W	P H Y P E Y F Q Q P
A P E Y H Q P Q A P	A N V A K I Q L R L	A G Q K R K H S E G	R V E V Y Y D G Q W
G T V C D D D F S I	H A A H V V C R E L	G Y V E A K S W T A	S S S Y G K G E G P
I W L D N L H C T G	N E A T L A A C T S	N G W G V T D C K H	T E D V G V V C S D
K R I P G F K F D N	S L I N Q I E N L N	I Q V E D I R I R A	I L S T Y R K R T P
V M E G Y V E V K E	G K T W K Q I C D K	H W T A K N S R V V	C G M F G F P G E R
T Y N T K V Y K M F	A S R R K Q R Y W P	F S M D C T G T E A	H I S S C K L G P Q
V S L D P M K N V T	C E N G L P A V V S	C V P G Q V F S P D	G P S R F R K A Y K
P E Q P L V R L R G	G A Y I G E G R V E	V L K N G E W G T V	C D D K W D L V S A
S V V C R E L G F G	S A K E A V T G S R	L G Q G I G P I H L	N E I Q C T G N E K
S I I D C K F N A E	S Q G C N H E E D A	G V R C N T P A M G	L Q K K L R L N G G
R N P Y E G R V E V	L V E R N G S L V W	G M V C G Q N W G I	V E A M V V C R Q L
G L G F A S N A F Q	E T W Y W H G D V N	S N K V V M S G V K	C S G T E L S L A H
C R H D G E D V A C	P Q G G V Q Y G A G	V A C S E T A P D L	V L N A E M V Q Q T
T Y L E D R P M F M	L Q C A M E E N C L	S A S A A Q T D P T	T G Y R R L L R F S
S Q I H N N G Q S D	F R P K N G R H A W	I W H D C H R H Y H	S M E V F T H Y D L
L N L N G T K V A E	G H K A S F C L E D	T E C E G D I Q K N	Y E C A N F G D Q G
I T M G C W D M Y R	H D I D C Q W V D I	T D V P P G D Y L F	Q V V I N P N F E V
A E S D Y S N N I M	K C R S R Y D G H R	I W M Y N C H I G G	S F S E E T E K K F
E H F S G L L N N Q	L S P Q		

#### Biological Activity

Measured by its ability to produce hydrogen peroxide during the oxidation of benzylamine. The specific activity is 7.47 pmol/min/μg.

#### Appearance

Lyophilized powder

#### Formulation

Lyophilized from a 0.2 μm filtered solution of PBS, pH 7.4.

#### Endotoxin Level

<1 EU/μg, determined by LAL method.

#### Reconstitution

It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH<sub>2</sub>O. For long term storage it is

	recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
<b>Storage &amp; Stability</b>	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
<b>Shipping</b>	Room temperature in continental US; may vary elsewhere.

## DESCRIPTION

### Background

The LOXL2 protein functions as a mediator in the post-translational oxidative deamination of lysine residues on target proteins, leading to the formation of deaminated lysine (allysine). Acting as a transcription corepressor, LOXL2 specifically mediates deamination of trimethylated 'Lys-4' of histone H3 (H3K4me3), a specific tag for epigenetic transcriptional activation. Notably, LOXL2 does not exhibit 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). Additionally, LOXL2 mediates deamination of methylated TAF10, a member of the transcription factor IID (TFIID) complex, inducing the release of TAF10 from promoters and leading to the inhibition of TFIID-dependent transcription. This repression results in the downregulation of genes essential for embryonic stem cell pluripotency, including POU5F1/OCT4, NANOG, KLF4, and SOX2. LOXL2 is involved in epithelial to mesenchymal transition (EMT), participating in the repression of E-cadherin (CDH1) through the deamination of histone H3. It interacts with the endoplasmic reticulum protein HSPA5, activating the IRE1-XBP1 pathway of the unfolded protein response, and is implicated in E-cadherin repression following hypoxia, potentially contributing to tumor progression. Furthermore, when secreted into the extracellular matrix, LOXL2 promotes the cross-linking of extracellular matrix proteins by mediating oxidative deamination of peptidyl lysine residues in precursors to fibrous collagen and elastin. It also acts as a regulator of sprouting angiogenesis and chondrocyte differentiation.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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