

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

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MERPLCSHLCSCLAMLALLSPLSLAQYDSWPHYPEYFQQP
APEYHQPPQAPANVAKIQLRLAGQKRKHSEGRVEVYYDGQW
GTVCDDDFSIHAHVVCRELGYVEAKSWTASSSYGKGE GP
IWLNDNLHCTGNEATLAACTSNGWGVTDCKHTEDVGVVCS D
KRIPGFKFDNSLINQIENLNIQVEDIRIRAILSTYRKRT P
VMEGYVEVKEGKTWKQICDKHWTAKNSRVVCGMFGFPGER
TYNTKVVYKMFASRRKQRYWPFMSDCTGTEAHISSCKLGP Q
VSLDPMKNVTCEGLPAVVS CVPGQVVFSPDGPSRFRKAYK
PEQPLVRLRG GAYIGEGRVEVLKNGEWGTV CDDKWDLVSA
SVVCRELGFSGAKEAVTGSRLGQGIGPIHLNEIQCTGNEK
SII DCKFNAESQGCNHEEDA GVRCNTPAMGLQKKLRLNGG
RNPYEGRVEVLVERNGLVWGMVCGQNWGI VEAMVVC RQL
GLGFASNAFQETWYWHGDVNSNKVVM SGVKCSGTELSLAH
CRHDGEDVACPQGGVQYGAGVACSETAPDLVLNAEMVQQT
TYLED RPFMFMLQCAMEENCL SASAAQTDPT TGYRRLLRFS
SQIHNNGQSDFRPKNGRHAWIWHDCRHYH SMEVFTHYDL
LNLNGTKVAEGHKASFCL EDTECEGDIQKN YECANFGDQG
ITMGCWDMYR HDIDCQWVDITDVPPGDYLF QVVINPNFEV
AESDYSNNIMKCRSRYDGHRIWMYNCHIGG SFSEETEKKF
EHFSGLLNNQLSPQ

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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 ddH₂O. For long term storage it is

	recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	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.
Shipping	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.

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA