

LSD1 Antibody
Catalog # ASC11939**Specification**

LSD1 Antibody - Product Information

Application	WB, IHC
Primary Accession	O60341
Other Accession	NP_001009999 , 58761544
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	Predicted: 93, 96 kDa; Observed: 93, 96 kDa
Application Notes	LSD1 antibody can be used for detection of LSD1 by Western blot at 1 - 2 µg/ml. Antibody can also be used for immunohistochemistry starting at 5 µg/mL.

LSD1 Antibody - Additional InformationGene ID **23028****Target/Specificity**

KDM1A; LSD1 antibody is human, mouse, and rat reactive. At least two isoforms of LSD1 are known to exist; this antibody detects both.

Reconstitution & Storage

LSD1 antibody can be stored at 4°C for three months and -20°C, stable for up to one year.

Precautions

LSD1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

LSD1 Antibody - Protein InformationName KDM1A ([HGNC:29079](#))**Function**

Histone demethylase that can demethylate both 'Lys-4' (H3K4me) and 'Lys-9' (H3K9me) of histone H3, thereby acting as a coactivator or a corepressor, depending on the context (PubMed: [15620353](http://www.uniprot.org/citations/15620353), PubMed: [15811342](http://www.uniprot.org/citations/15811342), PubMed: [16079794](http://www.uniprot.org/citations/16079794), PubMed: [16079795](http://www.uniprot.org/citations/16079795), PubMed: [16140033](http://www.uniprot.org/citations/16140033), PubMed: [16223729](http://www.uniprot.org/citations/16223729), PubMed: [27292636](http://www.uniprot.org/citations/27292636)). Acts by oxidizing the substrate by FAD to generate the corresponding imine that is subsequently hydrolyzed (PubMed: [15620353](http://www.uniprot.org/citations/15620353))

target="_blank">15620353, PubMed:15811342, PubMed:16079794, PubMed:21300290). Acts as a corepressor by mediating demethylation of H3K4me, a specific tag for epigenetic transcriptional activation. Demethylates both mono- (H3K4me1) and di-methylated (H3K4me2) H3K4me (PubMed:15620353, PubMed:20389281, PubMed:21300290, PubMed:23721412). May play a role in the repression of neuronal genes. Alone, it is unable to demethylate H3K4me on nucleosomes and requires the presence of RCOR1/CoREST to achieve such activity (PubMed:16079794, PubMed:16140033, PubMed:16885027, PubMed:21300290, PubMed:23721412). Also acts as a coactivator of androgen receptor (AR)-dependent transcription, by being recruited to AR target genes and mediating demethylation of H3K9me, a specific tag for epigenetic transcriptional repression. The presence of PRKCB in AR-containing complexes, which mediates phosphorylation of 'Thr-6' of histone H3 (H3T6ph), a specific tag that prevents demethylation H3K4me, prevents H3K4me demethylase activity of KDM1A (PubMed:16079795). Demethylates di-methylated 'Lys- 370' of p53/TP53 which prevents interaction of p53/TP53 with TP53BP1 and represses p53/TP53-mediated transcriptional activation. Demethylates and stabilizes the DNA methylase DNMT1 (PubMed:29691401). Demethylates methylated 'Lys-42' and methylated 'Lys-117' of SOX2 (PubMed:29358331). Required for gastrulation during embryogenesis. Component of a RCOR/GFI/KDM1A/HDAC complex that suppresses, via histone deacetylase (HDAC) recruitment, a number of genes implicated in multilineage blood cell development (PubMed:16079794, PubMed:16140033). Facilitates epithelial-to-mesenchymal transition by acting as an effector of SNAI1-mediated transcription repression of epithelial markers E-cadherin/CDH1, CDN7 and KRT8 (PubMed:20562920, PubMed:27292636). Required for the maintenance of the silenced state of the SNAI1 target genes E-cadherin/CDH1 and CDN7 (PubMed:20389281).

Cellular Location

Nucleus. Chromosome. Note=Associates with chromatin

Tissue Location

Ubiquitously expressed.

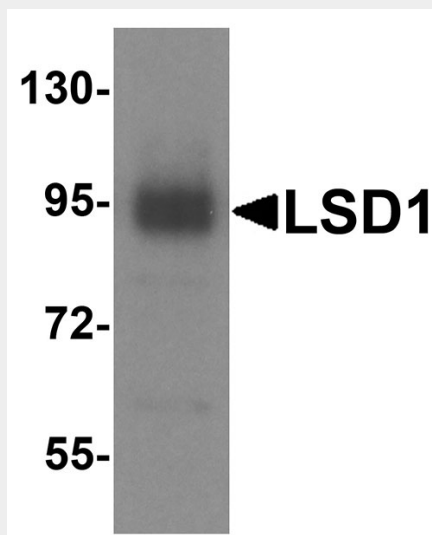
LSD1 Antibody - Protocols

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

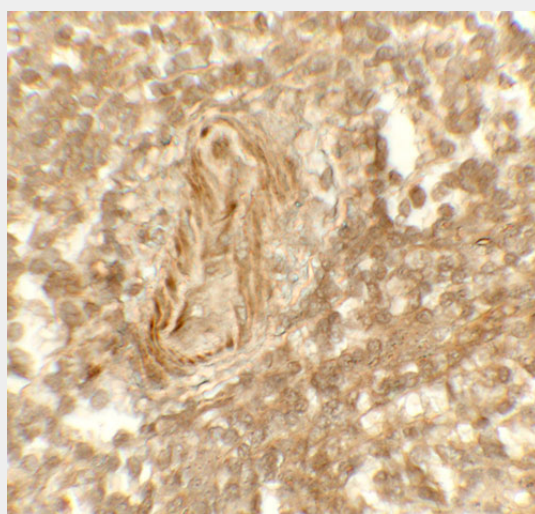
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)

- [Flow Cytometry](#)
- [Cell Culture](#)

LSD1 Antibody - Images



Western blot analysis of LSD1 in A549 cell lysate with LSD1 antibody at 1 μ g/ml.



Immunohistochemistry of LSD1 in human spleen tissue with LSD1 antibody at 5 μ g/mL.

LSD1 Antibody - Background

Histone modifications mediate changes in gene expression by altering chromatin structure or by serving as a platform to recruit other proteins. LSD1 is a recently discovered amine oxidase that catalyzes the lysine-specific demethylation of histone proteins via an FAD-dependent oxidative reaction (1). Methylation on histone H3-K9 is thought to play an important role in heterochromatin formation, while methylation on arginine and some lysine residues (such as H3-K4) is associated with active transcription (2). LSD1 associates with various proteins, including HDAC1/2, CoREST, and BHC80, that act to regulate LSD1 activity in vivo, and in a histone H3-K4-specific methylase complex that is involved in transcriptional regulation (3,4). Experiments have shown that CoREST, a SANT domain-containing corepressor (5) acts to enhance LSD1 activity, while BHC80, a PHD domain-containing protein (6), inhibits CoREST/LSD1 activity in vitro (3). LSD1-mediated histone demethylation thus may have significant effects on gene expression.

LSD1 Antibody - References

Shi Y, Lan F, Matson C, et al. Histone demethylation mediated by the nuclear amine oxidase homolog LSD1. *Cell* 2004; 119:941-53.

Kouzarides T. Histone methylation in transcriptional control. *Curr. Opin. Genet. Dev.* 2002; 12:198-209.

Shi YJ, Matson C, Lan F, et al. Regulation of LSD1 histone demethylase activity by its associated factors. *Mol. Cell* 2005; 19:857-64.

Nakamura T, Mori T, Tada S, et al. ALL-1 is a histone methyltransferase that assembles a supercomplex of proteins involved in transcriptional regulation. *Mol. Cell* 2002; 10:1119-28.