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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 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 Information

Gene 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℃ for three months and -20℃, 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 Information

Name 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, PubMed:15811342, PubMed:16140033, PubMed:16079794, PubMed:16079795, PubMed:16223729). Acts by oxidizing the substrate by FAD to generate the corresponding imine that is subsequently hydrolyzed (PubMed:15620353, PubMed:<a href="http://www.uniprot.org/citations/15811342"

target="_blank">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:16140033, PubMed:16079794, 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. Effector of SNAI1-mediated transcription repression of E-cadherin/CDH1, CDN7 and KRT8. Required for the maintenance of the silenced state of the SNAI1 target genes E-cadherin/CDH1 and CDN7 (PubMed:20389281).

Cellular Location
Nucleus

Tissue Location
Ubiquitously expressed.

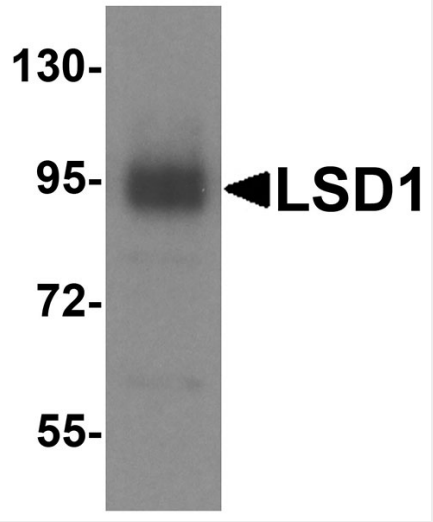
LSD1 Antibody - Protocols

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

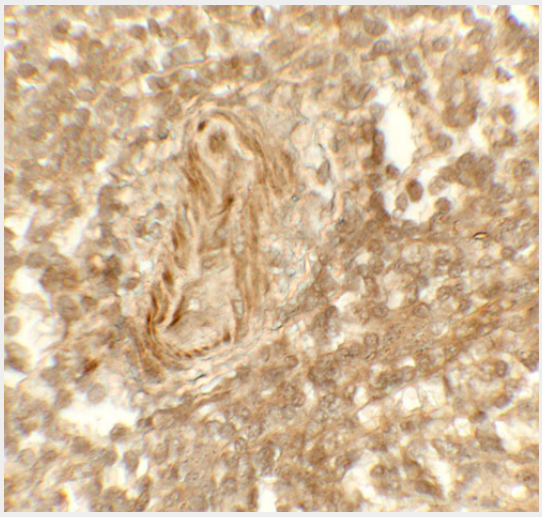
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

LSD1 Antibody - Images

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



Immunohistochemistry of LSD1 in human spleen tissue with LSD1 antibody at 5 µg/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.