Revision 5

Store at -20C

#2139

LSD1 Antibody

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, IF-IC, FC-FP, ChIP	H M R Mk	Endogenous	110	Rabbit	#O60341	23028

Product Usage Information

For optimal ChIP results, use 10 µl of antibody and 10 µg of chromatin (approximately 4 x 10^6 cells) per IP. This antibody has been validated using SimpleChIP® Enzymatic Chromatin IP Kits.

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:100
Immunofluorescence (Immunocytochemistry)	1:400
Flow Cytometry (Fixed/Permeabilized)	1:200 - 1:800
Chromatin IP	1:50

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

LSD1 Antibody detects endogenous levels of total LSD1 protein.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues near the amino-terminus of human LSD1 protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Lysine-specific demethylase 1 (LSD1; also known as AOF2 and BHC110) is a nuclear amine oxidase homolog that acts as a histone demethylase and transcription cofactor (1). Gene activation and repression is specifically regulated by the methylation state of distinct histone protein lysine residues. For example, methylation of histone H3 at Lys4 facilitates transcriptional activation by coordinating the recruitment of BPTF, a component of the NURF chromatin remodeling complex, and WDR5, a component of multiple histone methyltransferase complexes (2,3). In contrast, methylation of histone H3 at Lys9 facilitates transcriptional repression by recruiting HP1 (4,5). LSD1 is a component of the CoREST transcriptional co-repressor complex that also contains CoREST, CtBP, HDAC1 and HDAC2. As part of this complex, LSD1 demethylates mono-methyl and di-methyl histone H3 at Lys4 through a FAD-dependent oxidation reaction to facilitate neuronal-specific gene repression in non-neuronal cells (1,6,7). In contrast, LSD1 associates with androgen receptor in human prostate cells to demethylate mono-methyl and di-methyl histone H3 at Lys9 and facilitate androgen receptor-dependent transcriptional activation (8). Therefore, depending on gene context LSD1 can function as either a transcriptional co-repressor or co-activator. LSD1 activity is inhibited by the amine oxidase inhibitors pargyline, deprenyl, clorgyline and tranylcypromine (8).

Background References

1. Shi, Y. et al. (2004) *Cell* 119, 941-953.
2. Wysocka, J. et al. (2006) *Nature* 442, 86-90.
3. Wysocka, J. et al. (2005) *Cell* 121, 859-872.
4. Jacobs, S.A. and Khorasanizadeh, S. (2002) *Science* 295, 2080-2083.
5. Nielsen, P.R. et al. (2002) *Nature* 416, 103-107.
6. Shi, Y.J. et al. (2005) *Mol. Cell* 19, 857-864.
7. Lee, M.G. et al. (2005) *Nature* 437, 432-435.
8. Metzger, E. et al. (2005) *Nature* 437, 436-439.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation **IF-IC:** Immunofluorescence (Immunocytochemistry) **FC-FP:** Flow Cytometry (Fixed/Permeabilized) **ChIP:** Chromatin IP

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

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