Revision 1

Store at -20C

#37177

Phospho-LSD1 (Ser131) 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	H	Endogenous	110	Rabbit	#O60341	23028

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	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

Phospho-LSD1 (Ser131) Antibody recognizes endogenous levels of LSD1 protein only when phosphorylated at Ser131.

Species predicted to react based on 100% sequence homology

Mouse, Rat

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser131 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).
LSD1 is phosphorylated by CK2 at Ser131, Ser137, and Ser166 (9). Phosphorylation of LSD1 at Ser131 and Ser137 has been shown to help facilitate RNF168-dependent recruitment to sites of DNA damage (9).

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.
9. Costa, R. et al. (2014) *Biochim Biophys Acta* 1844, 722-9.
10. Peng, B. et al. (2015) *Nucleic Acids Res* 43, 5936-47.

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

Cross-Reactivity Key

H: Human

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Limited Uses