3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone 800-325-5832 • (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

ProductInformation

Anti-LSD1 (AOF2) (C-terminal)
produced in rabbit, affinity isolated antibody

Catalog Number **L4418**

Product Description

Anti-LSD1 (AOF2) (C-terminal) is produced in rabbit using as immunogen a synthetic peptide corresponding to amino acids 835-852 of human LSD1 (AOF2) (isoform b), conjugated to KLH via an N-terminal added cysteine residue. The immunizing sequence is present also in isoform a. This sequence is conserved in human, rat, and mouse. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-LSD1 (AOF2) (C-terminal) specifically recognizes human LSD1 (AOF2). Applications include immunoblotting (2 bands, 110-115 kDa), immunoprecipitation, and immunofluorescence. Staining of the LSD1 (AOF2) band in immunoblotting is specifically inhibited by the immunizing peptide.

Covalent modification of the amino-terminal and carboxy-terminal tails of histones, such as phosphorylation, acetylation, and methylation, plays a critical role in the regulation of chromatin structure and function. The level of histone acetylation and phosphorylation in the cell is regulated by pairs of opposing enzymes such as acetylase/deacetylase and kinase/phosphatase, respectively. Methylation of histones occurs on both arginine and lysine residues, and is also regulated in a dynamic manner. LSD1 (lysine specific demethylase 1) also known as AOF2 (amine oxidase flavin containing domain 2) is a lysine specific demethylase.[1] It is a nuclear protein containing a SWIRM domain, a FAD-binding motif and an amine oxidase domain.[1] This protein is a component of several histone deacetylase complexes that function through modifying chromatin structure to repress transcription.[2-5] In these complexes, LSD1 (AOF2) is referred to by additional names including KIAA0601 protein, BHC110 (BRAF-HDAC complex protein 110), and NPAO (Nuclear Polyamine Oxidase). Methylation of lysines can lead either to gene silencing or activation depending on the specific lysine residue that is methylated.[6] Thus, LSD1 (AOF2) action can signal either activation or repression of transcription. For example, demethylation of histone H3 Lys^4 by LSD1 (AOF2) leads to transcriptional repression of target genes, while demethylation of histone H3 at Lys^9 leads to de-repression of androgen receptor target genes.[1, 7]

The activity of LSD1 (AOF2) is regulated by its associated factors. CoREST, a transcriptional corepressor, promotes demethylation by enhancing the association of LSD1 (AOF2) with the nucleosomes, and it also protects LSD1 (AOF2) from proteasomal degradation.[8, 9]

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Antibody concentration: ~1.0 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 1-2 µg/mL is recommended using MCF7 cell lystes.

Immunoprecipitation: 1-2 µg of the antibody can immunoprecipitate LSD1 (AOF2) from MCF7 cell lysates.

Immunocytology: a working concentration of 5-10 µg/mL is recommended by immunofluorescence staining of MCF7 cells fixed with formaldehyde.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

1. Shi, Y., et al., *Cell*, **119**, 941-953 (2004).

2. Humphrey, G.W., et al., *J. Biol. Chem*., **276**, 6817-6824 (2001).
3. Shi, Y., et al., *Nature*, **422**, 735-738 (2003).
4. Hakimi, M.A., et al., *J. Biol. Chem*., **278**, 7234-7239 (2003).
5. Hakimi, M.A., et al., *Proc. Natl. Acad. Sci. USA*, **99**, 7420-7425 (2002).
6. Cyrus, M., and Yi, Z., *Nat. Rev. Mol. Cell Biol.*, **6**, 838-849 (2005).
7. Metzger, E., et al., *Nature*, **437**, 436-439 (2005).
8. Shi, Y.J., et al., *Mol. Cell*, **19**, 857-864 (2005).
9. Martin, C., and Zhang, Y., *Nature*, **437**, 432-435 (2005).

KAA,PHC 09/06-1