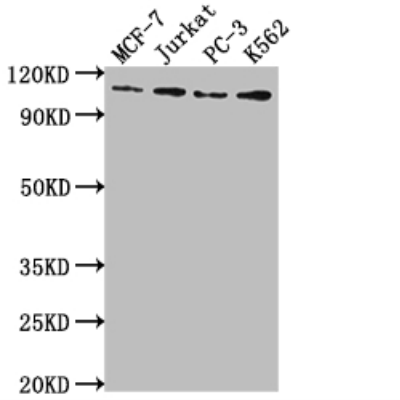
KDM1A Recombinant Monoclonal Antibody

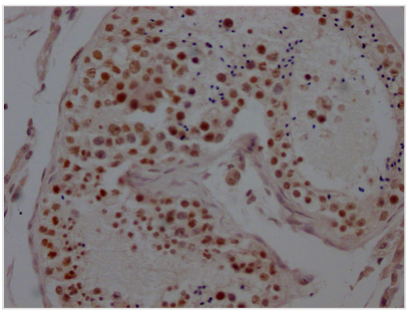
Product Code	CSB-RA222329A0HU
Storage	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.
Uniprot No.	O60341
Immunogen	A synthesized peptide derived from human KDM1 / LSD1
Species Reactivity	Human
Tested Applications	ELISA, WB, IHC; Recommended dilution: WB:1:500-1:5000, IHC:1:50-1:200
Relevance	Histone demethylase that demethylates both 'Lys-4' (H3K4me) and 'Lys-9' (H3K9me) of histone H3, thereby acting as a coactivator or a corepressor, depending on the context. Acts by oxidizing the substrate by FAD to generate the corresponding imine that is subsequently hydrolyzed. 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. 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. Also acts as a coactivator of androgen receptor (ANDR)-dependent transcription, by being recruited to ANDR target genes and mediating demethylation of H3K9me, a specific tag for epigenetic transcriptional repression. The presence of PRKCB in ANDR-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. 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. 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.
Form	Liquid
Conjugate	Non-conjugated
Storage Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Purification Method	Affinity-chromatography
Isotype	Rabbit IgG
Clonality	Monoclonal
Product Type	Recombinant Antibody
Immunogen Species	Homo sapiens (Human)

Research Area	Epigenetics and Nuclear Signaling
Gene Names	KDM1A
Clone No.	1G7

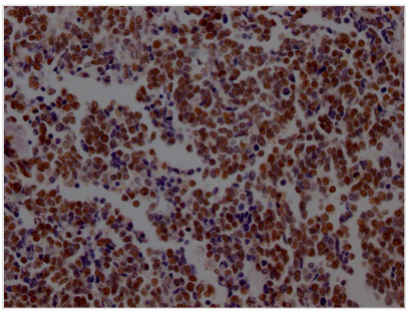
Image



Western Blot
Positive WB detected in: MCF-7 whole cell lysate, Jurkat whole cell lysate, PC-3 whole cell lysate, K562 whole cell lysate
All lanes: KDM1A antibody at 1:2000
Secondary
Goat polyclonal to rabbit IgG at 1/50000 dilution
Predicted band size: 93, 96 kDa
Observed band size: 110 kDa



IHC image of CSB-RA222329A0HU diluted at 1:100 and staining in paraffin-embedded human testis tissue performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4? overnight. The primary is detected by a Goat anti-rabbit IgG polymer labeled by HRP and visualized using 0.05% DAB.



IHC image of CSB-RA222329A0HU diluted at 1:100 and staining in paraffin-embedded human lung cancer performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4? overnight. The primary is detected by a Goat anti-rabbit IgG polymer labeled by HRP and visualized using 0.05% DAB.

Description

The KDM1A recombinant monoclonal antibody is generated using protein technology and DNA recombinant technology. First, mice are immunized with a synthesized peptide derived from human KDM1A. Next, the spleen of mice is removed under sterile conditions, and total RNA is extracted from spleen cells. The cDNA, synthesized by RNA reverse transcription, serves as the template for PCR amplification of the KDM1A antibody gene. The resulting KDM1A antibody gene is then introduced into a vector and transfected into host cells for culturing. Finally, the KDM1A recombinant monoclonal antibody is purified from the supernatant of cell culture using affinity chromatography. It is thoroughly validated and can be used for the detection of human KDM1A protein in ELISA, WB, and IHC experiments.

KDM1A, also known as LSD1, is a histone demethylase that plays a crucial role in regulating gene expression by removing methyl groups from lysine 4 of histone H3 (H3K4) and interacting with transcription factors and co-regulators. KDM1A can interact with the androgen receptor (AR) and estrogen receptor (ER) to modulate the transcriptional activity of their target genes. It is also involved in other cellular processes, including DNA damage repair, cell proliferation, and differentiation.