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Mouse Monoclonal Antibody to KDM1A

Purified Mouse Monoclonal Antibody
Catalog # AO2358a

Product Information

Application	WB, FC, ICC, E
Primary Accession	O60341
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Clone Names	5B2D5
Isotype	Mouse IgG1
Calculated MW	92903
Description	This gene encodes a nuclear protein containing a SWIRM domain, a FAD-binding motif, and an amine oxidase domain. This protein is a component of several histone deacetylase complexes, though it silences genes by functioning as a histone demethylase. Alternative splicing results in multiple transcript variants.;
Immunogen	Purified recombinant fragment of human KDM1A (AA: 55-263) expressed in E. Coli.
Formulation	Purified antibody in PBS with 0.05% sodium azide
Application Note	ELISA: 1/10000; WB: 1/500 - 1/2000; ICC: 1/200 - 1/1000; FCM: 1/200 - 1/400

Additional Information

Gene ID	23028
Other Names	AOF2; CPRF; KDM1; LSD1; BHC110
Dilution	WB~~1:1000 FC~~1:10~50 ICC~~N/A E~~N/A
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	Mouse Monoclonal Antibody to KDM1A is for research use only and not for use in diagnostic or therapeutic procedures.

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:16079794, PubMed:16079795, PubMed:16140033, PubMed:16223729, PubMed:27292636). Acts by oxidizing the substrate by FAD to generate the corresponding imine that is subsequently hydrolyzed (PubMed:15620353, PubMed:15811342, PubMed:16079794, PubMed:21300290, PubMed:26214369). Acts as a corepressor by mediating demethylation of H3K4me, a specific tag for epigenetic transcriptional activation. Demethylates both mono- (H3K4me1) and di-methylated (H3K4me2) (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:16079794, PubMed:16140033, 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 (PubMed:16079794, PubMed:16140033). Facilitates epithelial-to-mesenchymal transition by acting as an effector of SNAI1- mediated transcription repression of epithelial markers E-cadherin/CDH1, CDN7 and KRT8 (PubMed:20562920, PubMed:27292636). Required for the maintenance of the silenced state of the SNAI1 target genes E-cadherin/CDH1 and CDN7 (PubMed:20389281). Required for the repression of GIPR expression (PubMed:34655521, PubMed:34906447).

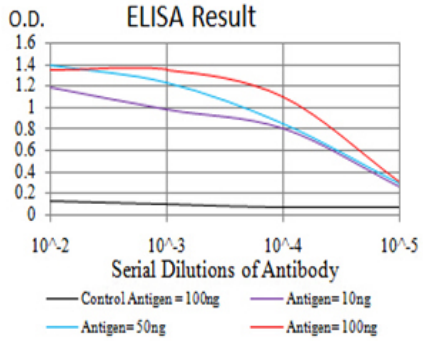
Cellular Location Nucleus. Chromosome. Note=Associates with chromatin

Tissue Location Ubiquitously expressed. [Isoform 4]: Expressed exclusively in brain tissues.

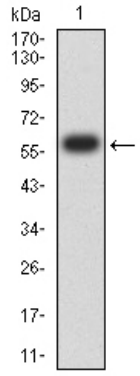
References

1.Int J Clin Exp Pathol. 2014 Dec 1;7(12):8929-34. ; 2.Blood. 2014 Jul 3;124(1):151-2. ;

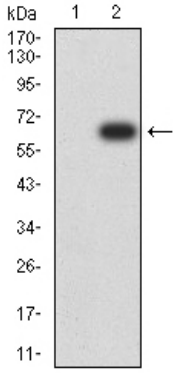
Images



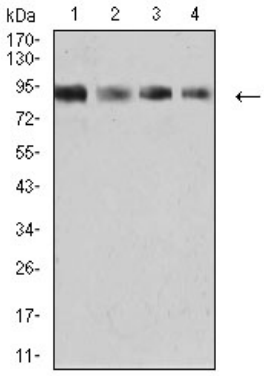
Black line: Control Antigen (100 ng);Purple line: Antigen (10ng); Blue line: Antigen (50 ng); Red line:Antigen (100 ng)



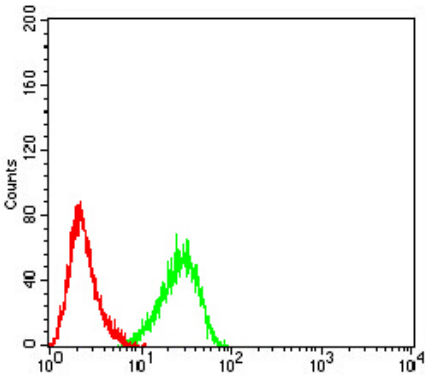
Western blot analysis using KDM1A mAb against human KDM1A (AA: 55-263) recombinant protein. (Expected MW is 60.3 kDa)



Western blot analysis using KDM1A mAb against HEK293 (1) and KDM1A (AA: 55-263)-hIgGFc transfected HEK293 (2) cell lysate.

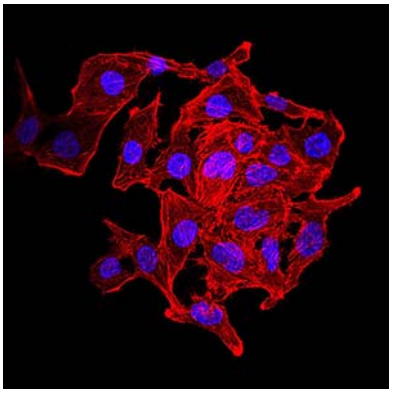


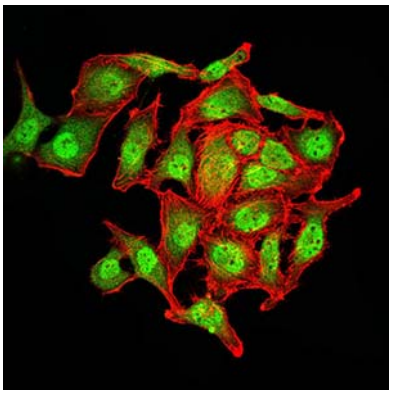
Western blot analysis using KDM1A mouse mAb against K562 (1), SW480 (2), Jurkat (3), and Hela (4) cell lysate.



Flow cytometric analysis of Hela cells using KDM1A mouse mAb (green) and negative control (red).

Immunofluorescence analysis of SK-OV-3 cells using KDM1A mouse mAb. Blue: DRAQ5 fluorescent DNA dye. Red: Actin filaments have been labeled with Alexa Fluor-555 phalloidin.





Immunofluorescence analysis of SK-OV-3 cells using KDM1A mouse mAb (green). Blue: DRAQ5 fluorescent DNA dye. Red: Actin filaments have been labeled with Alexa Fluor- 555 phalloidin. Secondary antibody from Fisher

Citations

- Upregulated phospholipase D2 expression and activity is related to the metastatic properties of melanoma

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.