SANTA CRUZ BIOTECHNOLOGY, INC.

JMJD2A (D-9): sc-271210

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

JMJD2A (jumonji domain containing 2A), also designated jumonji C domain-containing histone demethylation protein 3A, is a 1,064 amino acid protein encoded by the human gene JMJD2A. JMJD2A belongs to the JHDM3 histone demethylase family and contains one JmjC domain, one JmjN domain, two PHD-type zinc fingers and two Tudor domains. JMJD2A is histone demethylase that specifically demethylates Lys 9 and Lys 36 residues of Histone H3, thereby playing a central role in histone code. It does not demethylate Histone H3 Lys 4, H3 Lys 27 nor H4 Lys 20, however, it will demethylate tri-methylated H3 Lys 9 and H3 Lys 36 residue, while it has no activity on mono- and dimethylated residues. JMJD2A demethylation of lysine residues will generate formaldehyde and succinate. It also participates in transcriptional repression of ASCL2 and E2F-responsive promoters via the recruitment of histone deacetylases and NCOR1, respectively. JMJD2A is a ubiquitously expressed nuclear protein.

REFERENCES

1. Katoh, M. and Katoh, M. 2004. Identification and characterization of JMJD2 family genes in silico. Int. J. Oncol. 24: 1623-1628.
2. Gray, S.G., et al. 2005. Functional characterization of JMJD2A, a histone deacetylase- and retinoblastoma-binding protein. J. Biol. Chem. 280: 28507-28518.

CHROMOSOMAL LOCATION

Genetic locus: KDM4A (human) mapping to 1p34.1; Kdm4a (mouse) mapping to 4 D2.1.

SOURCE

JMJD2A (D-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 196-238 within an internal region of JMJD2A of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

JMJD2A (D-9) is available conjugated to agarose (sc-271210 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271210 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271210 PE), fluorescein (sc-271210 FITC), Alexa Fluor® 488 (sc-271210 AF488), Alexa Fluor® 546 (sc-271210 AF546), Alexa Fluor® 594 (sc-271210 AF594) or Alexa Fluor® 647 (sc-271210 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271210 AF680) or Alexa Fluor® 790 (sc-271210 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-271210 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

JMJD2A (D-9) is recommended for detection of JMJD2A of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

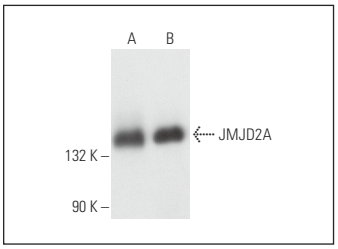
JMJD2A (D-9) is also recommended for detection of JMJD2A in additional species, including equine and bovine.

Suitable for use as control antibody for JMJD2A siRNA (h): sc-62515, JMJD2A siRNA (m): sc-62516, JMJD2A shRNA Plasmid (h): sc-62515-SH, JMJD2A shRNA Plasmid (m): sc-62516-SH, JMJD2A shRNA (h) Lentiviral Particles: sc-62515-V and JMJD2A shRNA (m) Lentiviral Particles: sc-62516-V.

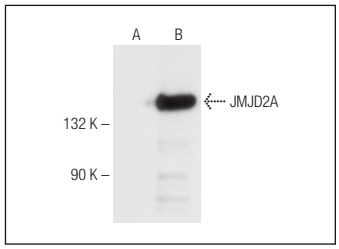
Molecular Weight of JMJD2A: 155 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2132, SK-N-MC whole cell lysate: sc-2237 or NIH/3T3 nuclear extract: sc-2138.

DATA



JMJD2A (D-9): sc-271210. Western blot analysis of JMJD2A expression in Jurkat (**A**) and SK-N-MC (**B**) whole cell lysates.



JMJD2A (D-9): sc-271210. Western blot analysis of JMJD2A expression in non transfected (**A**) and human JMJD2A transfected (**B**) HEK293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Li, L., et al. 2014. JMJD2A-dependent silencing of Sp1 in advanced breast cancer promotes metastasis by downregulation of DIRAS3. Breast Cancer Res. Treat. 147: 487-500.
2. Pal, A. and Das, S. 2015. Morphine causes persistent induction of nitrated neurofilaments in cortex and subcortex even during abstinence. Neuroscience 291: 177-188.
3. Li, L., et al. 2016. Erratum to: JMJD2A-dependent silencing of Sp1 in advanced breast cancer promotes metastasis by downregulation of DIRAS3. Breast Cancer Res. Treat. 156: 207-208.
4. Romano, A., et al. 2020. Estrogen induces selective transcription of caveolin1 variants in human beast cancer through estrogen responsive element-dependent mechanisms. Int. J. Mol. Sci. 21: 5989.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.