SANTA CRUZ BIOTECHNOLOGY, INC.

JMJD4 (D-10): sc-514881

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

A crucial regulator of chromatin dynamics and DNA transcription is the covalent modification and methylation of histones. Generally, methylation of certain lysine residues on Histone H3 and Histone H4 can be associated with transcriptionally active or inactive chromatin. This regulation has profound effects on the expression of genes and is part of an epigenetic memory network that determines cell fate. JMJD4 (Jumonji domain-containing protein 4) is a member of a family of JMJC domain-containing histone demethylases that are directly involved in removing methyl residues from distinct and unique lysine residues. These actions are implicated in gene expression and the regulation of cell senescence. JMJC domain-containing histone demethylases are also likely involved in development via their ability to regulate gene expression.

REFERENCES

1. Klose, R.J., et al. 2006. JMJC-domain-containing proteins and histone demethylation. Nat. Rev. Genet. 7: 715-727.
2. Tsukada, Y., et al. 2006. Histone demethylation by a family of JMJC domain-containing proteins. Nature 439: 811-816.
3. Cloos, P.A., et al. 2006. The putative oncogene GASC1 demethylates tri- and dimethylated lysine 9 on Histone H3. Nature 442: 307-311.
4. Hong, S., et al. 2007. Identification of JmjC domain-containing UTX and JMJD3 as Histone H3 lysine 27 demethylases. Proc. Natl. Acad. Sci. USA 104: 18439-18444.
5. Chang, B., et al. 2007. JMJD6 is a histone arginine demethylase. Science 318: 444-447.

CHROMOSOMAL LOCATION

Genetic locus: JMJD4 (human) mapping to 1q42.13; Jmjd4 (mouse) mapping to 11 B1.3.

SOURCE

JMJD4 (D-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 429-445 near the C-terminus of JMJD4 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

JMJD4 (D-10) is available conjugated to agarose (sc-514881 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-514881 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514881 PE), fluorescein (sc-514881 FITC), Alexa Fluor® 488 (sc-514881 AF488), Alexa Fluor® 546 (sc-514881 AF546), Alexa Fluor® 594 (sc-514881 AF594) or Alexa Fluor® 647 (sc-514881 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514881 AF680) or Alexa Fluor® 790 (sc-514881 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-514881 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

JMJD4 (D-10) is recommended for detection of JMJD4 isoforms 1 and 2 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).

Suitable for use as control antibody for JMJD4 siRNA (h): sc-88226, JMJD4 siRNA (m): sc-146327, JMJD4 shRNA Plasmid (h): sc-88226-SH, JMJD4 shRNA Plasmid (m): sc-146327-SH, JMJD4 shRNA (h) Lentiviral Particles: sc-88226-V and JMJD4 shRNA (m) Lentiviral Particles: sc-146327-V.

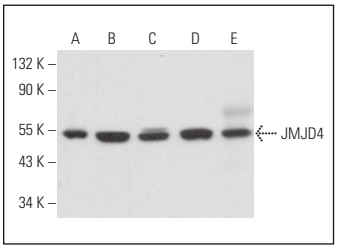
Molecular Weight of JMJD4: 53 kDa.

Positive Controls: SK-BR-3 cell lysate: sc-2218, Hep G2 cell lysate: sc-2227 or Jurkat whole cell lysate: sc-2204.

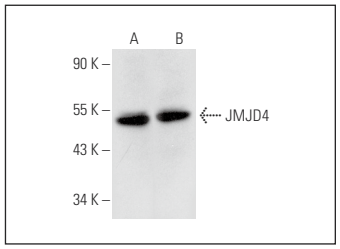
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



JMJD4 (D-10): sc-514881. Western blot analysis of JMJD4 expression in SK-BR-3 (**A**), NIH/3T3 (**B**), M1 (**C**) and RPE-J (**D**) whole cell lysates and rat thymus tissue extract (**E**).



JMJD4 (D-10): sc-514881. Western blot analysis of JMJD4 expression in Jurkat (**A**) and Hep G2 (**B**) whole cell lysates.

STORAGE

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

RESEARCH USE

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