SANTA CRUZ BIOTECHNOLOGY, INC.

JMJD4 (E-13): sc-131573

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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 demethyl-ases 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 demethyl-ates tri- and dimethylated Lysine 9 on Histone H3. Nature 442: 307-311.
4. Hong, S., et al. 2007. Identi-fication 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.
6. Pfau, R., et al. 2008. Members of a family of JMJC domain-containing oncoproteins immortalize embryonic fibroblasts via a JMJC domain-dependent process. Proc. Natl. Acad. Sci. USA 105: 1907-1912.
7. Cui, L., et al. 2008. Histone lysine methyltransferases and demethylases in *Plasmodium falciparum*. Int. J. Parasitol. 38: 1083-1097.

CHROMOSOMAL LOCATION

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

SOURCE

JMJD4 (E-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of JMJD4 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-131573 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

JMJD4 (E-13) is recommended for detection of JMJD4 isoforms 1 and 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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); non cross-reactive with other JMJD family members.

JMJD4 (E-13) is also recommended for detection of JMJD4 isoforms 1 and 2 in additional species, including equine and canine.

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.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.