SANTA CRUZ BIOTECHNOLOGY, INC.

JMJD1A (H-1): sc-398946

BACKGROUND

JMJD1A (jumonji domain containing 1A), also known as TSGA (testis-specific protein A), JMJD1, KDM3A, JHDM2A (JMJC domain-containing histone demethylation protein 2A) or JHMD2A, is a member of the JHDM2 histone demethylase family of proteins that is predominantly expressed in testis. Containing one JMJC domain and a C-terminal C2HC4 zinc finger, JMJD1A functions as a mono- and dimethylation-specific demethylase, binding iron and α-ketoglutarate as cofactors and demethylating Lysine 9 of Histone H3. This suggests that JMJD1A plays a central role in the histone code and participates in nuclear hormone receptor-based transcriptional regulation. In addition, JMJD1A plays an important role in the regulation of cell growth during development and in chromatin regulation. JMJD1A directly regulates the expression of TNP1 and Protamine 1 (proteins required for the proper packaging and condensation of sperm chromatin) and, therefore, plays an essential role in spermatogenesis.

REFERENCES

1. Nagase, T., et al. 1998. Prediction of the coding sequences of unidentified human genes. XI. The complete sequences of 100 new cDNA clones from brain which code for large proteins *in vitro*. DNA Res. 5: 277-286.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 611512. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Knebel, J., et al. 2006. Repression of transcription by TSGA/JHDM1A, a novel interaction partner of the ETS protein ER71. J. Cell. Biochem. 99: 319-329.

CHROMOSOMAL LOCATION

Genetic locus: KDM3A (human) mapping to 2p11.2; Kdm3a (mouse) mapping to 6 C1.

SOURCE

JMJD1A (H-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 390-412 within an internal region of JMJD1A of human origin.

PRODUCT

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

JMJD1A (H-1) is available conjugated to agarose (sc-398946 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-398946 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398946 PE), fluorescein (sc-398946 FITC), Alexa Fluor® 488 (sc-398946 AF488), Alexa Fluor® 546 (sc-398946 AF546), Alexa Fluor® 594 (sc-398946 AF594) or Alexa Fluor® 647 (sc-398946 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398946 AF680) or Alexa Fluor® 790 (sc-398946 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-398946 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

JMJD1A (H-1) is recommended for detection of JMJD1A 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 JMJD1A siRNA (h): sc-94627, JMJD1A siRNA (m): sc-146322, JMJD1A shRNA Plasmid (h): sc-94627-SH, JMJD1A shRNA Plasmid (m): sc-146322-SH, JMJD1A shRNA (h) Lentiviral Particles: sc-94627-V and JMJD1A shRNA (m) Lentiviral Particles: sc-146322-V.

Molecular Weight of JMJD1A monomer: 150 kDa.

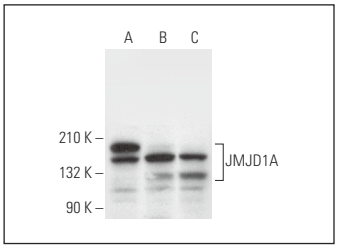
Molecular Weight of JMJD1A homodimer: 300 kDa.

Positive Controls: F9 cell lysate: sc-2245, HeLa whole cell lysate: sc-2200 or MCF7 whole cell lysate: sc-2206.

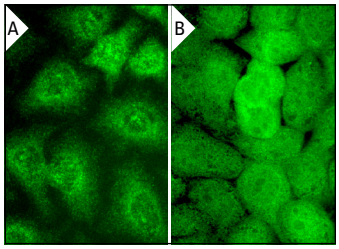
RECOMMENDED SUPPORT REAGENTS

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



JMJD1A (H-1): sc-398946. Western blot analysis of JMJD1A expression in F9 (**A**), HeLa (**B**) and MCF7 (**C**) whole cell lysates.



JMJD1A (H-1): sc-398946. Immunofluorescence staining of methanol-fixed HeLa (**A**) and A-431 (**B**) cells showing nuclear and cytoplasmic localization.

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.