SANTA CRUZ BIOTECHNOLOGY, INC.

G9a (C-15): sc-22879

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Distinct modifications of histone tails, such as acetylation, phosphorlation and methylation, regulate nuclear processes such as control of transcription and mitotic chromosome condensation. Histone methyltransferases (HMTases) are among the different groups of enzymes known to catalyze the covalent modification. G9a, a SET domain-containing protein, is a novel mammalian lysine-preferring HMTase. G9a, also known as BAT8, NG36 or HMTase (for mammalian histone methyltransferase), has strong HMTase activity towards Histone H3 Lysine 9 methylation *in vitro*. G9a plays a dominant role in euchromatic Histone H3 Lysine 9 methylation, is essential for early embryogenesis and is involved in the transcriptional repression of developmental genes. Like SUV39H, G9a transfers methyl groups to the lysine residues of Histone H3, but with a 10-20-fold higher activity than SUV39H1. G9a also adds methyl groups to Lysine 27 as well as Lysine 9 in Histone H3. G9a localizes in the nucleus, indicating that it may contribute to the organization of the higher order chromatin structure of non-centromeric loci. The human G9a gene maps to chromosome 6p21.31.

REFERENCES

1. Spies, T., et al. 1989. Human major histocompatibility complex contains a minimum of 19 genes between the complement cluster and HLA-B. Proc. Natl. Acad. Sci. USA 86: 8955-8958.
2. Milner, C.M. and Campbell, R.D. 1993. The G9a gene in the human major histocompatibility complex encodes a novel protein containing ankyrin-like repeats. Biochem. J. 290: 811-818.
3. Tachibana, M., et al. 2001. Set domain-containing protein, G9a, is a novel lysine-preferring mammalian histone methyltransferase with hyperactivity and specific selectivity to Lysines 9 and 27 of Histone H3. J. Biol. Chem. 276: 25309-25317.
4. Brown, S.E., et al. 2001. Novel NG36/G9a gene products encoded within the human and mouse MHC class III regions. Mamm. Genome 12: 916-924.

CHROMOSOMAL LOCATION

Genetic locus: EHMT2 (human) mapping to 6p21.31; Ehmt2 (mouse) mapping to 17 B1.

SOURCE

G9a (C-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of G9a 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-22879 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

G9a (C-15) is recommended for detection of G9a of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

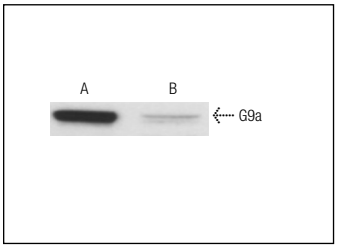
G9a (C-15) is also recommended for detection of G9a in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for G9a siRNA (h): sc-43777, G9a siRNA (m): sc-145298, G9a shRNA Plasmid (h): sc-43777-SH, G9a shRNA Plasmid (m): sc-145298-SH, G9a shRNA (h) Lentiviral Particles: sc-43777-V and G9a shRNA (m) Lentiviral Particles: sc-145298-V.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



G9a (C-15): sc-22879. Western blot analysis of G9a expression in non-transfected control (**A**) and G9a siRNA transfected (**B**) HeLa cell lysates. Kindly provided by The Dr. Michael Rosenfeld Laboratory, University of California San Diego.

RESEARCH USE

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