SANTA CRUZ BIOTECHNOLOGY, INC.

Histone H1 (G-1): sc-393530

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Eukaryotic histones are basic and water soluble nuclear proteins that form hetero-octameric nucleosome particles by wrapping 146 base pairs of DNA in a left-handed super-helical turn sequentially to form chromosomal fiber. Two molecules of each of the four core histones (H2A, H2B, H3, and H4) form the octamer; formed of two H2A-H2B dimers and two H3-H4 dimers, forming two nearly symmetrical halves by tertiary structure. Over 80% of nucleosomes contain the linker Histone H1, derived from an intronless gene, that interacts with linker DNA between nucleosomes and mediates compaction into higher order chromatin. Histones are subject to posttranslational modification by enzymes primarily on their N-terminal tails, but also in their globular domains. Such modifications include methylation, citrullination, acetylation, phosphorylation, sumoylation, ubiquitination and ADP-ribosylation.

REFERENCES

1. Rupp, R.A., et al. 2005. Gene regulation by Histone H1: new links to DNA methylation. Cell 123: 1178-1179.
2. Martin, C., et al. 2005. The diverse functions of histone lysine methylation. Nat. Rev. Mol. Cell Biol. 6: 838-849.
3. Gunjan, A., et al. 2005. Regulation of histone synthesis and nucleosome assembly. Biochimie 87: 625-635.
4. Bode, A.M., et al. 2005. Inducible covalent posttranslational modification of Histone H3. Sci. STKE 2005: re4.
5. Bustin, M., et al. 2005. The dynamics of Hhistone H1 function in chromatin. Mol. Cell 17: 617-620.

SOURCE

Histone H1 (G-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 196-219 at the C-terminus of Histone H1 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-393530 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Histone H1 (G-1) is recommended for detection of all histone H1 isoforms 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

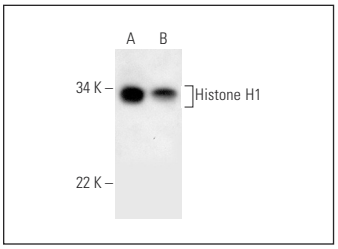
Molecular Weight of Histone H1: 32-33 kDa.

Positive Controls: Jurkat nuclear extract: sc-2132 or LNCaP cell lysate: sc-2231.

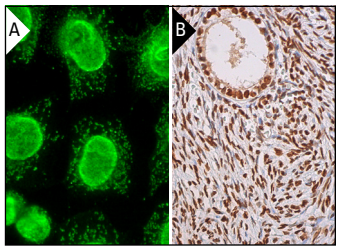
RECOMMENDED SUPPORT REAGENTS

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 L-Agarose: sc-2336 (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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Histone H1 (G-1): sc-393530. Western blot analysis of Histone H1 expression in Jurkat nuclear extract (**A**) and LNCaP whole cell lysate (**B**).



Histone H1 (G-1): sc-393530. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human ovary tissue showing nuclear staining of follicle cells and ovarian stroma cells (**B**).

SELECT PRODUCT CITATIONS

1. Rodríguez-Lima, O., et al. 2015. Molecular cloning of a cDNA encoding for taenia solium TATA-box binding protein 1 (TsTBP1) and study of Its interactions with the TATA-Box of Actin 5 and typical 2-Cys peroxiredoxin genes. PLoS ONE 10: e0141818.
2. Sabbir, M.G. 2018. Loss of Ca^{2+}/calmodulin dependent protein kinase kinase 2 leads to aberrant transferrin phosphorylation and trafficking: a potential biomarker for Alzheimer's disease. Front. Mol. Biosci. 5: 99.
3. Song, T., et al. 2019. Transcriptomic analysis reveals cell apoptotic signature modified by heparanase in melanoma cells. J. Cell. Mol. Med. 23: 4559-4568.
4. Gao, Y., et al. 2020. PARP-1-regulated TNFα expression in the dorsal root ganglia and spinal dorsal horn contributes to the pathogenesis of neuropathic pain in rats. Brain Behav. Immun. 88: 482-496.

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.