SANTA CRUZ BIOTECHNOLOGY, INC.

Histone H1 (SPM256): sc-56403

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, which is comprised 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.

SOURCE

Histone H1 (SPM256) is a mouse monoclonal antibody raised against leukemia biopsy cells 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.

Histone H1 (SPM256) is available conjugated to agarose (sc-56403 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; and to either phycoerythrin (sc-56403 PE) or fluorescein (sc-56403 FITC), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

In addition, Histone H1 (SPM256) is available conjugated to TRITC (sc-56403 TRITC, 200 µg/ml), for IF, IHC(P) and FCM.

APPLICATIONS

Histone H1 (SPM256) is recommended for detection of Histone H1 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500), flow cytometry (1 µg per 1 x 10^6 cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

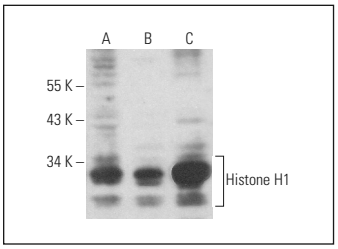
Molecular Weight of Histone H1: 32-33 kDa.

Positive Controls: AT3B-1 whole cell lysate: sc-364372, Jurkat nuclear extract: sc-2132 or LNCaP cell lysate: sc-2231.

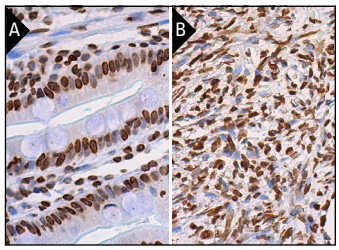
RECOMMENDED SUPPORT REAGENTS

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 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. 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 (SPM256): sc-56403. Western blot analysis of Histone H1 expression in WEHI-231 nuclear extract (**A**) and AT3B-1 (**B**) and BXPC-3 (**C**) whole cell lysates.



Histone H1 (SPM256): sc-56403. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing nuclear staining of glandular cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing nuclear staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Sen, T., et al. 2011. Tumor protein p63/nuclear factor κB feedback loop in regulation of cell death. J. Biol. Chem. 286: 43204-43213.
2. Granese, B., et al. 2013. Validation of microarray data in human lymphoblasts shows a role of the ubiquitin-proteasome system and NFκB in the pathogenesis of down syndrome. BMC Med. Genomics 6: 24.
3. Plotnikov, A., et al. 2019. Nuclear ERK translocation is mediated by protein kinase CK2 and accelerated by autophosphorylation. Cell. Physiol. Biochem. 53: 366-387.

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.

CONJUGATES

See **Histone H1 (H-2): sc-393358** for Histone H1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.