SANTA CRUZ BIOTECHNOLOGY, INC.

Histone H4 (F-9): sc-25260

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. Gunjan, A., et al. 2005. Regulation of histone synthesis and nucleosome assembly. Biochimie 87: 625-635.
2. Bode, A.M., et al. 2005. Inducible covalent posttranslational modification of Histone H3. Sci. STKE 2005: re4.

SOURCE

Histone H4 (F-9) is a mouse monoclonal antibody raised against amino acids 7-103 of Histone H4 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Histone H4 (F-9) is available conjugated to agarose (sc-25260 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to either phycoerythrin (sc-25260 PE), fluorescein (sc-25260 FITC), Alexa Fluor® 488 (sc-25260 AF488), Alexa Fluor® 546 (sc-25260 AF546), Alexa Fluor® 594 (sc-25260 AF594) or Alexa Fluor® 647 (sc-25260 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-25260 AF680) or Alexa Fluor® 790 (sc-25260 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Histone H4 (F-9) is recommended for detection of Histone H4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:500), 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).

Histone H4 (F-9) is also recommended for detection of Histone H4 in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of acetylated Histone H4: 11 kDa.

Molecular Weight of non-acetylated Histone H4: 11 kDa.

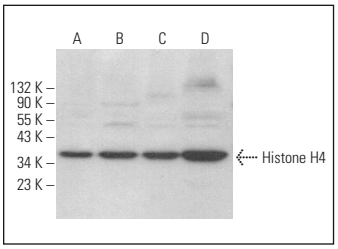
Molecular Weight of hyper-acetylated Histone H4: 35 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, MCF7 whole cell lysate: sc-2206 or SK-N-MC cell lysate: sc-2237.

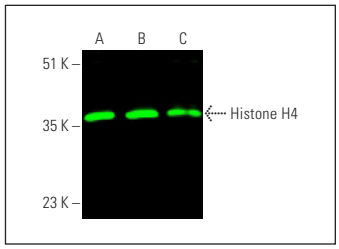
STORAGE

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

DATA



Histone H4 (F-9): sc-25260. Western blot analysis of Histone H4 expression in MCF7 (**A**), HL-60 (**B**), Jurkat (**C**) and IMR-32 (**D**) whole cell lysates.



Histone H4 (F-9): sc-25260. Near-infrared western blot analysis of Histone H4 expression in HeLa (**A**), SK-N-MC (**B**) and HEK293T (**C**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.

SELECT PRODUCT CITATIONS

1. Schiller, M., et al. 2008. Autoantigens are translocated into small apoptotic bodies during early stages of apoptosis. Cell Death Differ. 15: 183-191.
2. Kumar, S., et al. 2009. Lack of aspartoacylase activity disrupts survival and differentiation of neural progenitors and oligodendrocytes in a mouse model of Canavan disease. J. Neurosci. Res. 87: 3415-3427.
3. Yamaguchi, A. and Kitajo, K. 2012. The effect of PRMT1-mediated arginine methylation on the subcellular localization, stress granules, and detergent-insoluble aggregates of FUS/TLS. PLoS ONE 7: e49267.
4. Klein, D., et al. 2013. Hox genes are involved in vascular wall-resident multipotent stem cell differentiation into smooth muscle cells. Sci. Rep. 3: 2178.
5. Machado-Neto, J.A., et al. 2014. ANKHD1, a novel component of the Hippo signaling pathway, promotes YAP1 activation and cell cycle progression in prostate cancer cells. Exp. Cell Res. 324: 137-145.
6. Lima, K., et al. 2015. Differential profile of PIP4K2A expression in hematological malignancies. Blood Cells Mol. Dis. 55: 228-235.
7. Yamaguchi, A. and Takanashi, K. 2016. FUS interacts with nuclear matrix-associated protein SAFB1 as well as Matrin3 to regulate splicing and ligand-mediated transcription. Sci. Rep. 6: 35195.
8. Sun, J.G., et al. 2016. Yap1 promotes the survival and self-renewal of breast tumor initiating cells via inhibiting Smad3 signaling. Oncotarget 7: 9692-9706.
9. Pucci, S., et al. 2019. Pro-oncogenic action of LOX-1 and its splice variant LOX-1Δ4 in breast cancer phenotypes. Cell Death Dis. 10: 53.
10. Colón, D.F., et al. 2019. Neutrophil extracellular traps (NETs) exacerbate severity of infant sepsis. Crit. Care 23: 113.

RESEARCH USE

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