SANTA CRUZ BIOTECHNOLOGY, INC.

Histone H4 (H-97): sc-10810

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. Rupp, R.A., et al. 2005. Gene regulation by histone H1: new links to DNA methylation. Cell 123: 1178-1179.
3. Martin, C. and Zhang, Y. 2005. The diverse functions of histone lysine methylation. Nat. Rev. Mol. Cell Biol. 6: 838-849.
4. Bode, A.M., et al. 2005. Inducible covalent posttranslational modification of histone H3. Sci. STKE 2005: re4.

SOURCE

Histone H4 (H-97) is a rabbit polyclonal antibody raised against amino acids 7-103 of Histone H4 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.

APPLICATIONS

Histone H4 (H-97) is recommended for detection of Histone H4 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Histone H4 (H-97) is also recommended for detection of Histone H4 in additional species, including equine, canine, bovine, porcine and avian.

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

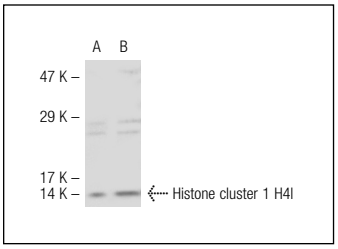
Molecular Weight of hyper-acetylated Histone H4: 35 kDa.

Positive Controls: Histone cluster 1 H4I (h): 293T Lysate: sc-117324, SK-N-MC cell lysate: sc-2237 or HeLa whole cell lysate: sc-2200.

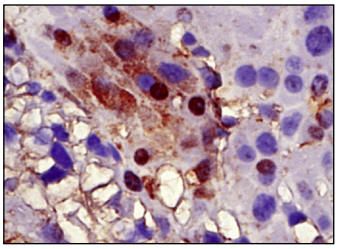
STORAGE

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

DATA



Histone H4 (H-97): sc-10810. Western blot analysis of Histone cluster 1 H4I expression in non-transfected: sc-117752 (**A**) and human Histone cluster 1 H4I transfected: sc-117324 (**B**) 293T whole cell lysates.



Histone H4 (H-97): sc-10810. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse placenta tissue showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Marin-Husstege, M., et al. 2002. Histone deacetylase activity is necessary for oligodendrocyte lineage progression. J. Neurosci. 22: 10333-10345.
2. Covelo, G., et al. 2006. Prothymosin α interacts with free core histones in the nucleus of dividing cells. J. Biochem. 140: 627-637.
3. Matsushita-Ishiodori, Y., et al. 2007. The *C. elegans* homologue of the spastic paraplegia protein, spastin, disassembles microtubules. Biochem. Biophys. Res. Commun. 359: 157-162.
4. Gutierrez, J. and Paredes, R. 2007. Chromatin remodeling by SWI/SNF results in nucleosome mobilization to preferential positions in the rat osteocalcin gene promoter. J. Biol. Chem. 282: 9445-9457.
5. Munemasa, Y., et al. 2008. Promoter region-specific histone incorporation by the novel histone chaperone ANP32B and DNA-binding factor KLF5. Mol. Cell. Biol. 28: 1171-1181.
6. Arnauld, S., et al. 2009. Modulation of the hepatic fatty acid pool in peroxisomal 3-ketoacyl-CoA thiolase B-null mice exposed to the selective PPARα agonist Wy14,643. Biochimie 91: 1376-1386.
7. Margariti, A., et al. 2009. Splicing of HDAC7 modulates the SRF-myocardin complex during stem-cell differentiation towards smooth muscle cells. J. Cell Sci. 122: 460-470.
8. Catalano, M.G., et al. 2012. Cytotoxic activity of the histone deacetylase inhibitor panobinostat (LBH589) in anaplastic thyroid cancer *in vitro* and *in vivo*. Int. J. Cancer 130: 694-704.
9. Thomé, C.H., et al. 2012. Linker for activation of T-cell family member2 (LAT2) a lipid raft adaptor protein for AKT signaling, is an early mediator of alkylphospholipid anti-leukemic activity. Mol. Cell. Proteomics 11: 1898-1912.

RESEARCH USE

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