SANTA CRUZ BIOTECHNOLOGY, INC.

Histone H1 (N-19): sc-8615

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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.

CHROMOSOMAL LOCATION

Genetic locus: HIST1H1B/HIST1H1C/HIST1H1D/HIST1H1E (human) mapping to 6p22.2, Hist1h1b/Hist1h1c/Hist1h1d/Hist1h1e (mouse) mapping to 13 A3.

SOURCE

Histone H1 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Histone H1 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-8615 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Histone H1 (N-19) is recommended for detection of Histone H1B, H1C, H1D and H1E 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).

Histone H1 (N-19) is also recommended for detection of Histone H1B, H1C, H1D and H1E in additional species, including canine and bovine.

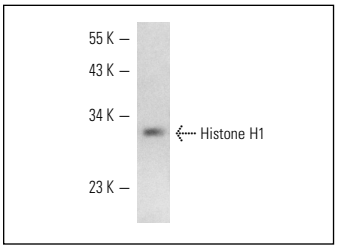
Molecular Weight of Histone H1: 32-33 kDa.

Positive Controls: LNCaP cell lysate: sc-2231, Jurkat whole cell lysate: sc-2204 or A-431 whole cell lysate: sc-2201.

STORAGE

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

DATA



Histone H1 (N-19): sc-8615. Western blot analysis of human recombinant Histone H1.

SELECT PRODUCT CITATIONS

1. Lim, J.W., et al. 2002. Expression of Ku70 and Ku80 mediated by NFκB and cyclooxygenase-2 is related to proliferation of human gastric cancer cells. J. Biol. Chem. 277: 46093-46100.
2. Song, J.Y., et al. 2003. Oxidative stress induces nuclear loss of DNA repair proteins Ku70 and Ku80 and apoptosis in pancreatic acinar AR42J cells. J. Biol. Chem. 278: 36676-36687.
3. Seyfried, J., et al. 2003. Gene dosage-dependent effects of bcl-2 expression on cellular survival and redox status. Free Radic. Biol. Med. 34: 1517-1530.
4. Kim, B.J., et al. 2007. Identification and characterization of human Cdc7 nuclear retention and export sequences in the context of chromatin binding. J. Biol. Chem. 282: 30029-30038.
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6. Valledor, A.F., et al. 2008. IFN-γ-mediated inhibition of MAPK phosphatase expression results in prolonged MAPK activity in response to M-CSF and inhibition of proliferation. Blood 112: 3274-3282.
7. Seo, J.Y., et al. 2009. Protective effect of lycopene on oxidative stress-induced cell death of pancreatic acinar cells. Ann. N.Y. Acad. Sci. 1171: 570-575.
8. Fuentes-Calvo, I., et al. 2010. Analysis of k-ras nuclear expression in fibroblasts and mesangial cells. PLoS ONE 5: e8703.
9. Miranda, C., et al. 2010. Role of Stat3 in *in vitro* transformation triggered by TRK oncogenes. PLoS ONE 5: e9446.

RESEARCH USE

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