

Histone H4 (C-20)-R: sc-8658-R

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 Histone H1 function in chromatin. *Mol. Cell* 17: 617-620.
6. Hake, S.B., et al. 2006. Histone H3 variants and their potential role in indexing mammalian genomes: the "H3 barcode hypothesis". *Proc. Natl. Acad. Sci. USA* 103: 6428-6435.

CHROMOSOMAL LOCATION

Genetic locus: HIST4H4 (human) mapping to 112p12.3; Hist4h4 (mouse) mapping to 6 G1.

SOURCE

Histone H4 (C-20)-R is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus 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.

Blocking peptide available for competition studies, sc-8658 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

Histone H4 (C-20)-R is recommended for detection of Histone H4 of mouse, rat, human, *Drosophila melanogaster*, *Xenopus laevis* and *Caenorhabditis elegans* 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 H4 (C-20)-R 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.

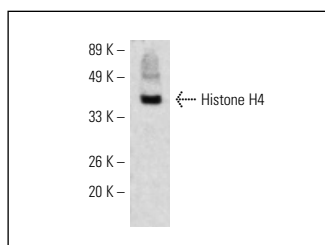
Molecular Weight of hyper-acetylated Histone H4: 35 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, HeLa nuclear extract: sc-2120 or SK-N-MC cell lysate: sc-2237.

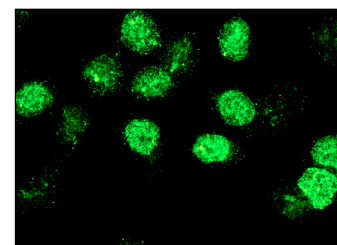
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



Histone H4 (C-20): sc-8658. Western blot analysis of acetylated Histone H4 expression in HeLa nuclear extract.



Histone H4 (C-20): sc-8658. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Wu, M.Y., et al. 2008. Identification of chromatin remodeling genes Arid4a and Arid4b as leukemia suppressor genes. *J. Natl. Cancer Inst.* 100: 1247-1259.
2. Lunde, I.G., et al. 2011. Angiotensin II and norepinephrine activate specific calcineurin-dependent NFAT transcription factor isoforms in cardiomyocytes. *J. Appl. Physiol.* 111: 1278-1289.
3. Finsen, A.V., et al. 2011. Syndecan-4 is essential for development of concentric myocardial hypertrophy via stretch-induced activation of the calcineurin-NFAT pathway. *PLoS ONE* 6: e28302.