SANTA CRUZ BIOTECHNOLOGY, INC.

Histone H2B (C-19): sc-8651

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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; 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. de la Cruz, X., et al. 2005. Do protein motifs read the histone code? Bioessays 27: 164-175.
7. 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.
8. Nightingale, K.P., et al. 2006. Histone modifications: signalling receptors and potential elements of a heritable epigenetic code. Curr. Opin. Genet. Dev. 16: 125-136.
9. Wurtele, H., et al. 2006. Histone post-translational modifications and the response to DNA double-strand breaks. Curr. Opin. Cell Biol. 18: 137-144.

SOURCE

Histone H2B (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Histone H2B of human origin.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

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-8651 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Histone H2B (C-19) is recommended for detection of Histone H2B of mouse, rat, human, D*rosophila 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 H2B (C-19) is also recommended for detection of Histone H2B in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of Histone H2B: 18 kDa.

Positive Controls: BJAB nuclear extract: sc-2145, Jurkat whole cell lysate: sc-2204 or HeLa whole cell lysate: sc-2200.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Krishna, M.B., et al. 2015. Reduced Tregs in peripheral blood of PCOS patients-a consequence of aberrant Il2 signaling. J. Clin. Endocrinol. Metab. 100: 282-292.

RESEARCH USE

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