SANTA CRUZ BIOTECHNOLOGY, INC.

Histone H3F3C (1B1-B2): sc-517385

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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. and Becker, P.B. 2005. Gene regulation by Histone H1: new links to DNA methylation. Cell 123: 1178-1179.
2. Martin, C. and Zhang, Y. 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. and Dong, Z. 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. and Allis, C.D. 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. and Verreault, A. 2006. Histone post-translational modifications and the response to DNA double-strand breaks. Curr. Opin. Cell Biol. 18: 137-144.

CHROMOSOMAL LOCATION

Genetic locus: H3F3C (human) mapping to 12p11.21; H3f3c (mouse) mapping to 2 E5.

SOURCE

Histone H3F3C (1B1-B2) is a mouse monoclonal antibody raised against a synthetic peptide corresponding to the C-terminal region of Histone H3F3C of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 200 µg IgG_3 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-517385 X, 200 µg/0.1 ml.

APPLICATIONS

Histone H3F3C (1B1-B2) is recommended for detection of Histone H3F3C of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for Histone H3 siRNA (h): sc-37980, Histone H3 siRNA (m): sc-37981, Histone H3 shRNA Plasmid (h): sc-37980-SH, Histone H3 shRNA Plasmid (m): sc-37981-SH, Histone H3 shRNA (h) Lentiviral Particles: sc-37980-V and Histone H3 shRNA (m) Lentiviral Particles: sc-37981-V.

Histone H3F3C (1B1-B2) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of Histone H3F3C: 15 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

SELECT PRODUCT CITATIONS

1. Elia, L., et al. 2018. UHRF1 epigenetically orchestrates smooth muscle cell plasticity in arterial disease. J. Clin. Invest. 128: 2473-2486.
2. Wang, X., et al. 2021. Mucin 20 modulates proteasome capacity through c-Met signalling to increase carfilzomib sensitivity in mantle cell lymphoma. J. Cell. Mol. Med. 25: 10164-10174.

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 for detailed protocols and support products.