



# Dimethyl Histone H3 (3C2): sc-517567

## 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.

## CHROMOSOMAL LOCATION

Genetic locus: HIST1H3A (human) mapping to 6p22.2; Hist1h3a (mouse) mapping to 13 A3.1.

## SOURCE

Dimethyl Histone H3 (3C2) is a mouse monoclonal antibody raised against a short amino acid sequence containing Lys 9 dimethylated Histone H3 of human origin.

## PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Dimethyl Histone H3 (3C2) is recommended for detection of Lys 9 dimethylated Histone H3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000).

Molecular Weight of Dimethyl Histone H3: 15 kDa.

## SELECT PRODUCT CITATIONS

1. Mehta, A., et al. 2019. Targeting KRAS mutant lung cancer cells with siRNA-loaded bovine serum albumin nanoparticles. *Pharm. Res.* 36: 133.

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.