

Monomethyl Histone H4 (5E10-D8): sc-134221

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 fibers. 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. Histones are subject to posttranslational modification by enzymes primarily on their N-terminal tails, but also in their globular domains. Human and mouse Histone H4 are subject to methylation at Lys 20, a modification that may be necessary for select DNA transactions or chromatin state transitions.

REFERENCES

- Schurter, B.T., et al. 2001. Methylation of Histone H3 by coactivator-associated arginine methyltransferase 1. *Biochemistry* 40: 5747-5756.
- Chicas, A., et al. 2005. Small interfering RNAs that trigger posttranscriptional gene silencing are not required for the Histone H3 Lys9 methylation necessary for transgenic tandem repeat stabilization in *Neurospora crassa*. *Mol. Cell. Biol.* 25: 3793-3801.

SOURCE

Monomethyl Histone H4 (5E10-D8) is a mouse monoclonal antibody raised against a short amino acid sequence containing Lys 20 monomethylated Histone H4 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Monomethyl Histone H4 (5E10-D8) is available conjugated to agarose (sc-134221 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-134221 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-134221 PE), fluorescein (sc-134221 FITC), Alexa Fluor® 488 (sc-134221 AF488), Alexa Fluor® 546 (sc-134221 AF546), Alexa Fluor® 594 (sc-134221 AF594) or Alexa Fluor® 647 (sc-134221 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-134221 AF680) or Alexa Fluor® 790 (sc-134221 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Monomethyl Histone H4 (5E10-D8) is recommended for detection of Lys 20 monomethylated Histone H4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with Histone H4 unmethylated or dimethylated at lysine 20; non cross-reactive with Histone H3.

Molecular Weight of acetylated Monomethyl Histone H4: 11 kDa.

Molecular Weight of non-acetylated Monomethyl Histone H4: 11 kDa.

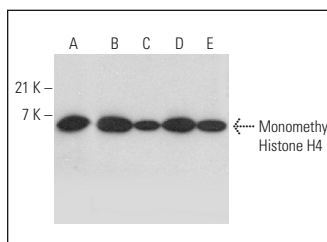
Molecular Weight of hyper-acetylated Monomethyl Histone H4: 35 kDa.

Positive Controls: K-562 nuclear extract: sc-2130, MCF7 nuclear extract: sc-2149 or HeLa whole cell lysate: sc-2200.

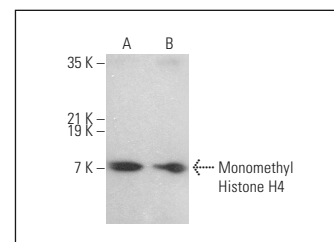
RECOMMENDED SUPPORT REAGENTS

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.

DATA



Monomethyl Histone H4 (5E10-D8): sc-134221. Western blot analysis of Monomethyl Histone H4 expression in HeLa whole cell lysate (A) and K-562 (B), MCF7 (C), NIH/3T3 (D) and KNKR (E) nuclear extracts.



Monomethyl Histone H4 (5E10-D8): sc-134221. Western blot analysis of Monomethyl Histone H4 expression in 3T3-L1 (A) and PC-12 (B) whole cell lysates.

SELECT PRODUCT CITATIONS

- Shirakata, Y., et al. 2014. Histone H4 modification during mouse spermatogenesis. *J. Reprod. Dev.* 60: 383-387.
- Dai, L., et al. 2017. SETD4 regulates cell quiescence and catalyzes the trimethylation of H4K20 during diapause formation in artemia. *Mol. Cell. Biol.* 37: e00453.
- Ye, S., et al. 2019. SET domain-containing protein 4 epigenetically controls breast cancer stem cell quiescence. *Cancer Res.* 79: 4729-4743.
- Dunn, H.A., et al. 2019. ELFN2 is a postsynaptic cell adhesion molecule with essential roles in controlling group III mGluRs in the brain and neuropsychiatric behavior. *Mol. Psychiatry* 24: 1902-1919.
- Jia, W.H., et al. 2019. DEK terminates diapause by activation of quiescent cells in the crustacean *Artemia*. *Biochem. J.* 476: 1753-1769.

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 for detailed protocols and support products.

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