

Trimethyl Histone H4 (6F8-D9): sc-134216

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 Histone H3 is subject to trimethylation at Lys-10, 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 co-activator-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 Lys-9 methylation necessary for transgenic tandem repeat stabilization in *Neurospora crassa*. *Mol. Cell. Biol.* 25: 3793-3801.
- Fischle, W., et al. 2005. Regulation of HP1-chromatin binding by Histone H3 methylation and phosphorylation. *Nature* 438: 1116-1122.
- Bode, A.M. and Dong, Z. 2005. Inducible covalent posttranslational modification of Histone H3. *Sci. STKE* 2005: RE4.
- Dialynas, G.K., et al. 2006. Methylation-independent binding to Histone H3 and cell cycle-dependent incorporation of HP1 β into heterochromatin. *J. Biol. Chem.* 281: 14350-14360.

SOURCE

Trimethyl Histone H4 (6F8-D9) is a mouse monoclonal antibody raised against a short amino acid sequence containing Lys 20 trimethylated Histone H4 of human origin.

PRODUCT

Each vial contains 200 μ g IgG $_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Trimethyl Histone H4 (6F8-D9) is available conjugated to agarose (sc-134216 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-134216 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-134216 PE), fluorescein (sc-134216 FITC), Alexa Fluor[®] 488 (sc-134216 AF488), Alexa Fluor[®] 546 (sc-134216 AF546), Alexa Fluor[®] 594 (sc-134216 AF594) or Alexa Fluor[®] 647 (sc-134216 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-134216 AF680) or Alexa Fluor[®] 790 (sc-134216 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

Trimethyl Histone H4 (6F8-D9) is recommended for detection of Lys 20 trimethylated Histone H4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); may cross-react with lysine 20 dimethylated Histone H4; non cross-reactive with Histone H3.

Molecular Weight of acetylated Trimethyl Histone H4: 11 kDa.

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

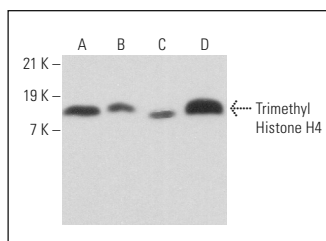
Molecular Weight of hyper-acetylated Trimethyl Histone H4: 35 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, NIH/3T3 whole cell lysate: sc-2210 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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).

DATA



Trimethyl Histone H4 (6F8-D9): sc-134216. Western blot analysis of Trimethyl Histone H4 expression in HeLa (A), HL-60 (B), NIH/3T3 (C) and RAW 264.7 (D) whole cell lysates.

SELECT PRODUCT CITATIONS

- Leupold, J.H., et al. 2012. Promoter cloning and characterization of the human programmed cell death protein 4 (pdc4) gene: evidence for ZBP-89 and Sp-binding motifs as essential Pdc4 regulators. *Biosci. Rep.* 32: 281-297.
- Shirakata, Y., et al. 2014. Histone H4 modification during mouse spermatogenesis. *J. Reprod. Dev.* 60: 383-387.
- Cundell, M.J., et al. 2016. A PP2A-B55 recognition signal controls substrate dephosphorylation kinetics during mitotic exit. *J. Cell Biol.* 214: 539-554.

RESEARCH USE

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