SANTA CRUZ BIOTECHNOLOGY, INC.

HDAC4 (B-5): sc-365093

BACKGROUND

In the intact cell, DNA closely associates with histones and other nuclear proteins to form chromatin. The remodeling of chromatin is believed to be a critical component of transcriptional regulation and a major source of this remodeling is brought about by the acetylation of nucleosomal histones. Acetylation of lysine residues in the amino terminal tail domain of histone results in an allosteric change in the nucleosomal conformation and an increased accessibility to transcription factors by DNA. Conversely, the deacetylation of histones is associated with transcriptional silencing. Several mammalian proteins have been identified as nuclear histone acetylases, including GCN5, p300/CBP, PCAF (p300/CBP associated factor), HAT1, and the TFIID subunit TAF II p250. Mammalian HDAC1 (also designated HD1), HDAC2 (also designated RPD3) and HDAC3-6, have been identified as histone deacetylases.

REFERENCES

1. Lee, D.Y., et al. 1993. A positive role for histone acetylation in transcription factor access to nucleosomal DNA. Cell 72: 73-82.
2. Braunstein, M., et al. 1993. Transcriptional silencing in yeast is associated with reduced nucleosome acetylation. Genes Dev. 7: 592-604.
3. Bauer, W.R., et al. 1994. Nucleosome structural changes due to acetylation. J. Mol. Biol. 236: 685-690.
4. Taunton, J., et al. 1996. A mammalian histone deacetylase related to the yeast transcriptional regulator Rpd3p. Science 272: 408-411.

CHROMOSOMAL LOCATION

Genetic locus: HDAC4 (human) mapping to 2q37.3; Hdac4 (mouse) mapping to 1 D.

SOURCE

HDAC4 (B-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-23 at the N-terminus of HDAC4 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HDAC4 (B-5) is available conjugated to agarose (sc-365093 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-365093 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365093 PE), fluorescein (sc-365093 FITC), Alexa Fluor® 488 (sc-365093 AF488), Alexa Fluor® 546 (sc-365093 AF546), Alexa Fluor® 594 (sc-365093 AF594) or Alexa Fluor® 647 (sc-365093 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365093 AF680) or Alexa Fluor® 790 (sc-365093 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-365093 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

HDAC4 (B-5) is recommended for detection of HDAC4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

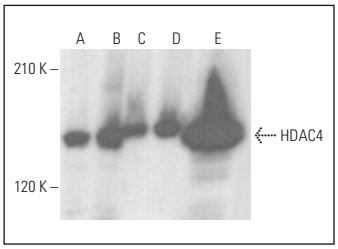
HDAC4 (B-5) is also recommended for detection of HDAC4 in additional species, including avian.

Suitable for use as control antibody for HDAC4 siRNA (h): sc-35540, HDAC4 siRNA (m): sc-35541, HDAC4 shRNA Plasmid (h): sc-35540-SH, HDAC4 shRNA Plasmid (m): sc-35541-SH, HDAC4 shRNA (h) Lentiviral Particles: sc-35540-V and HDAC4 shRNA (m) Lentiviral Particles: sc-35541-V.

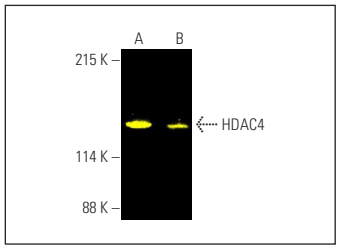
Molecular Weight of HDAC4: 140 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, Jurkat nuclear extract: sc-2132 or NIH/3T3 nuclear extract: sc-2138.

DATA



HDAC4 (B-5): sc-365093. Western blot analysis of HDAC4 expression in HeLa (**A**), Jurkat (**B**), K-562 (**C**) and NIH/3T3 (**D**) nuclear extracts and MOLT-4 whole cell lysate (**E**).



HDAC4 (B-5) Alexa Fluor® 488: sc-365093 AF488. Direct fluorescent western blot analysis of HDAC4 expression in THP-1 (**A**) and J774.A1 (**B**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214.

SELECT PRODUCT CITATIONS

1. Holzer, K., et al. 2019. Nucleoporin Nup155 is part of the p53 network in liver cancer. Nat. Commun. 10: 2147.
2. Macabuag, N., et al. 2022. Developing HDAC4-selective protein degraders to investigate the role of HDAC4 in Huntington's disease pathology. J. Med. Chem. 65: 12445-12459.

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.