

HDAC4 (A-4): sc-46672

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.

REFERENCE

- Lee, D.Y., et al. 1993. A positive role for histone acetylation in transcription factor access to nucleosomal DNA. *Cell* 72: 73-82.
- Braunstein, M., et al. 1993. Transcriptional silencing in yeast is associated with reduced nucleosome acetylation. *Genes Dev.* 7: 592-604.

CHROMOSOMAL LOCATION

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

SOURCE

HDAC4 (A-4) is a mouse monoclonal antibody raised against amino acids 530-631 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. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-46672 X, 200 µg/0.1 ml.

HDAC4 (A-4) is available conjugated to agarose (sc-46672 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-46672 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-46672 PE), fluorescein (sc-46672 FITC), Alexa Fluor® 488 (sc-46672 AF488), Alexa Fluor® 546 (sc-46672 AF546), Alexa Fluor® 594 (sc-46672 AF594) or Alexa Fluor® 647 (sc-46672 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-46672 AF680) or Alexa Fluor® 790 (sc-46672 AF790), 200 µg/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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

APPLICATIONS

HDAC4 (A-4) is recommended for detection of HDAC4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:2000), 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

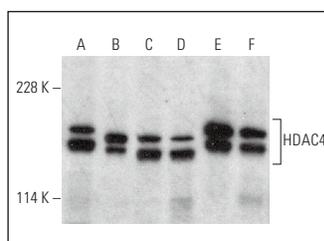
Suitable for use as control antibody for HDAC4 siRNA (h): sc-35540, HDAC4 siRNA (m): sc-35541, HDAC4 shRNA Plasmid (h): sc-35540-SH, HDAC4 shRNA Plasmid (m): sc-35541-SH, HDAC4 shRNA (h) Lentiviral Particles: sc-35540-V and HDAC4 shRNA (m) Lentiviral Particles: sc-35541-V.

HDAC4 (A-4) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

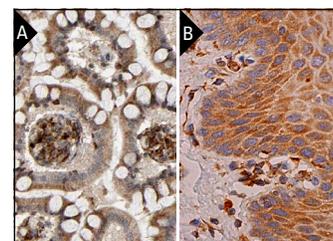
Molecular Weight of HDAC4: 140 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, HeLa nuclear extract: sc-2120 or MOLT-4 cell lysate: sc-2233.

DATA



HDAC4 (A-4) HRP: sc-46672 HRP. Direct western blot analysis of HDAC4 expression in Jurkat (A), NIH/3T3 (B), THP-1 (C) and MOLT-4 (D) whole cell lysates and HeLa (E) and Jurkat (F) nuclear extracts.



HDAC4 (A-4): sc-46672. Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing nuclear and cytoplasmic staining of glandular cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human esophagus tissue showing cytoplasmic staining of squamous epithelial cells (B).

SELECT PRODUCT CITATIONS

- Gupta, M.P., et al. 2008. HDAC4 and PCAF bind to cardiac sarcomeres and play a role in regulating myofilament contractile activity. *J. Biol. Chem.* 283: 10135-10146.
- Cheng, C., et al. 2021. HDAC4 promotes nasopharyngeal carcinoma progression and serves as a therapeutic target. *Cell Death Dis.* 12: 137.
- Xu, L., et al. 2022. HDAC3 inhibition improves urinary-concentrating defect in hypokalaemia by promoting AQP2 transcription. *Acta Physiol.* 234: e13802.
- Palamaris, K., et al. 2023. Histone deacetylases (HDACs): promising biomarkers and potential therapeutic targets in thymic epithelial tumors. *Int. J. Mol. Sci.* 24: 4263.

RESEARCH USE

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