SANTA CRUZ BIOTECHNOLOGY, INC.

HDAC4 (N-18): sc-5245

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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, PCAF (p300/CBPassociated factor), p300/CBP, 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.

CHROMOSOMAL LOCATION

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

SOURCE

HDAC4 (N-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of HDAC4 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-5245 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

HDAC4 (N-18) is recommended for detection of HDAC4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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), 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).

HDAC4 (N-18) 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: NIH/3T3 nuclear extract: sc-2138, Jurkat whole cell lysate: sc-2204 or HeLa nuclear extract: sc-2120.

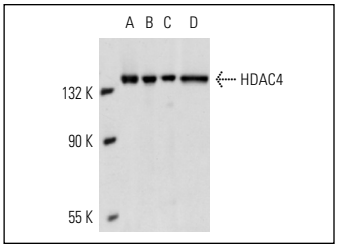
STORAGE

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

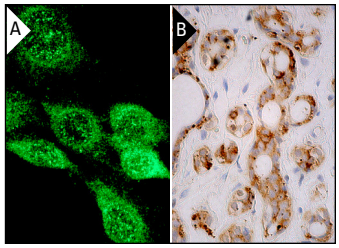
RESEARCH USE

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

DATA



HDAC4 (N-18): sc-5245. Western blot analysis of HDAC4 expression in NIH/3T3 (**A**), HeLa (**B**) and KNRK (**C**) nuclear extracts and Jurkat whole cell lysate (**D**).



HDAC4 (N-18): sc-5245. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic and nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human breast tissue showing cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Lemercier, C., et al. 2002. Class II histone deacetylases are directly recruited by Bcl-6 transcriptional repressor. J. Biol. Chem. 277: 22045-22052.
2. Kramer, O.H., et al. 2003. The histone deacetylase inhibitor valproic acid selectively induces proteasomal degradation of HDAC2. EMBO J. 22: 3411-3420.
3. Matsuoka, H., et al. 2007. Disruption of HDAC4/N-CoR complex by histone deacetylase inhibitors leads to inhibition of IL-2 gene expression. Biochem. Pharmacol. 74: 465-476.
4. Wang, W.L., et al. 2008. Sumoylation of LAP1 is involved in the HDAC4-mediated repression of COX-2 transcription. Nucleic Acids Res. 36: 6066-7609.
5. Guan, Y., et al. 2012. Subcellular relocation of histone deacetylase 4 regulates growth plate chondrocyte differentiation through Ca^{2+}/calmodulin-dependent kinase IV. Am. J. Physiol., Cell Physiol. 303: C33-C40.
6. Rui, J., et al. 2012. Epigenetic silencing of CD8 genes by ThPOK-mediated deacetylation during CD4 T cell differentiation. J. Immunol. 189: 1380-1390.

PROTOCOLS

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