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HDAC1 Antibody (N-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AW5089

Product Information

Application	IF, WB
Primary Accession	Q13547
Other Accession	P70288, Q92769, P56519, Q4QQW4, O09106, P56517, Q32PJ8, O42227, Q91695, NP_004955.2
Reactivity	Mouse, Rat, Human
Predicted	Bovine, Chicken, Xenopus
Host	Rabbit
Clonality	Polyclonal
Calculated MW	55103
Isotype	Rabbit IgG
Antigen Source	HUMAN

Additional Information

Gene ID	3065
Antigen Region	70-99
Other Names	HDAC1; RPD3L1; Histone deacetylase 1
Dilution	IF~~1:10~50 WB~~1:1000
Target/Specificity	This HDAC1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 70-99 amino acids from the N-terminal region of human HDAC1.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	HDAC1 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	HDAC1 {ECO:0000303|PubMed:10846170, ECO:0000312|HGNC:HGNC:4852}
Function	Histone deacetylase that catalyzes the deacetylation of lysine residues on

	the N-terminal part of the core histones (H2A, H2B, H3 and H4) (PubMed:16762839, PubMed:17704056, PubMed:28497810). Histone deacetylation gives a tag for epigenetic repression and plays an important role in transcriptional regulation, cell cycle progression and developmental events (PubMed:16762839, PubMed:17704056). Histone deacetylases act via the formation of large multiprotein complexes (PubMed:16762839, PubMed:17704056). Acts as a component of the histone deacetylase NuRD complex which participates in the remodeling of chromatin (PubMed:16428440, PubMed:28977666). As part of the SIN3B complex is recruited downstream of the constitutively active genes transcriptional start sites through interaction with histones and mitigates histone acetylation and RNA polymerase II progression within transcribed regions contributing to the regulation of transcription (PubMed:21041482). Also functions as a deacetylase for non-histone targets, such as NR1D2, RELA, SP1, SP3, STAT3 and TSHZ3 (PubMed:12837748, PubMed:16285960, PubMed:16478997, PubMed:17996965, PubMed:19343227). Deacetylates SP proteins, SP1 and SP3, and regulates their function (PubMed:12837748, PubMed:16478997). Component of the BRG1-RB1-HDAC1 complex, which negatively regulates the CREST-mediated transcription in resting neurons (PubMed:19081374). Upon calcium stimulation, HDAC1 is released from the complex and CREBBP is recruited, which facilitates transcriptional activation (PubMed:19081374). Deacetylates TSHZ3 and regulates its transcriptional repressor activity (PubMed:19343227). Deacetylates 'Lys-310' in RELA and thereby inhibits the transcriptional activity of NF-kappa-B (PubMed:17000776). Deacetylates NR1D2 and abrogates the effect of KAT5- mediated relieving of NR1D2 transcription repression activity (PubMed:17996965). Component of a RCOR/GFI/KDM1A/HDAC complex that suppresses, via histone deacetylase (HDAC) recruitment, a number of genes implicated in multilineage blood cell development (By similarity). Involved in CIART-mediated transcriptional repression of the circadian transcriptional activator: CLOCK-BMAL1 heterodimer (By similarity). Required for the transcriptional repression of circadian target genes, such as PER1, mediated by the large PER complex or CRY1 through histone deacetylation (By similarity). In addition to protein deacetylase activity, also has protein-lysine deacylase activity: acts as a protein decrotonylase and delactylase by mediating decrotonylation ((2E)-butenoyl) and delactylation (lactoyl) of histones, respectively (PubMed:28497810, PubMed:35044827).
Cellular Location	Nucleus
Tissue Location	Ubiquitous, with higher levels in heart, pancreas and testis, and lower levels in kidney and brain

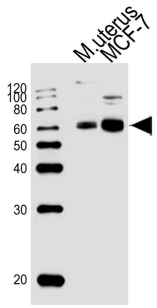
Background

Histone acetylation and deacetylation, catalyzed by multisubunit complexes, play a key role in the regulation of eukaryotic gene expression. The protein encoded by this gene belongs to the histone deacetylase/acuc/apha family and is a component of the histone deacetylase complex. It also interacts with retinoblastoma tumor-suppressor protein and this complex is a key element in the control of cell proliferation and differentiation. Together with metastasis-associated protein-2, it deacetylates p53 and modulates its effect on cell growth and apoptosis.

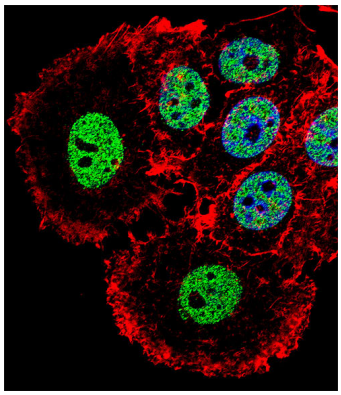
References

Yang, Z., et al. Clin. Chem. Lab. Med. 48(12):1785-1791(2010) Grausenburger, R., et al. J. Immunol. 185(6):3489-3497(2010) Miller, K.M., et al. Nat. Struct. Mol. Biol. 17(9):1144-1151(2010) Brandt, S., et al. Int. J. Biochem. Cell Biol. 42(9):1472-1481(2010) Leone, V., et al. Oncogene 29(30):4341-4351(2010)

Images



All lanes : Anti-HDAC1 Antibody (N-term) at 1:1000 dilution Lane 1: mouse uterus lysates Lane 2: MCF-7 whole cell lysates Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L),Peroxidase conjugated at 1/10000 dilution Predicted band size : 60 kDa Blocking/Dilution buffer: 5% NFDM/TBST.



Fluorescent confocal image of MCF-7 cell stained with HDAC1 Antibody (N-term)(Cat#AW5089).MCF-7 cells were fixed with 4% PFA (20 min), permeabilized with Triton X-100 (0.1%, 10 min), then incubated with HDAC1 primary antibody (1:25, 1 h at 37°C). For secondary antibody, Alexa Fluor® 488 conjugated donkey anti-rabbit antibody (green) was used (1:400, 50 min at 37°C).Cytoplasmic actin was counterstained with Alexa Fluor® 555 (red) conjugated Phalloidin (7units/ml, 1 h at 37°C). Nuclei were counterstained with DAPI (blue) (10 µg/ml, 10 min). HDAC1 immunoreactivity is localized to Nucleus significantly.