10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

HDAC6 Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1106a

Product Information

Application	IHC-P, WB, E
Primary Accession	Q9UBN7
Other Accession	NP_006035
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	131419
Antigen Region	1182-1215

Additional Information

Gene ID	10013
Other Names	Histone deacetylase 6, HD6, HDAC6, KIAA0901
Target/Specificity	This HDAC6 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 1182-1215 amino acids from the C-terminal region of human HDAC6.
Dilution	IHC-P~~1:100 WB~~1:2000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
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	HDAC6 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	HDAC6 {ECO:0000303|PubMed:10220385, ECO:0000312|HGNC:HGNC:14064}
Function	Deacetylates a wide range of non-histone substrates (PubMed: 12024216, PubMed:18606987, PubMed:20308065, PubMed:24882211, PubMed:26246421, PubMed:30538141, PubMed:31857589, PubMed:30770470, PubMed:38534334, PubMed:39567688). Plays a central

role in microtubule- dependent cell motility by mediating deacetylation of tubulin (PubMed:12024216, PubMed:20308065, PubMed:26246421). Required for cilia disassembly via deacetylation of alpha-tubulin (PubMed:17604723, PubMed:26246421). Alpha-tubulin deacetylation results in destabilization of dynamic microtubules (By similarity). Promotes deacetylation of CTTN, leading to actin polymerization, promotion of autophagosome-lysosome fusion and completion of autophagy (PubMed:30538141). Deacetylates SQSTM1 (PubMed:31857589). Deacetylates peroxiredoxins PRDX1 and PRDX2, decreasing their reducing activity (PubMed:18606987). Deacetylates antiviral protein RIGI in the presence of viral mRNAs which is required for viral RNA detection by RIGI (By similarity). Sequentially deacetylates and polyubiquitinates DNA mismatch repair protein MSH2 which leads to MSH2 degradation, reducing cellular sensitivity to DNA-damaging agents and decreasing cellular DNA mismatch repair activities (PubMed:24882211). Deacetylates DNA mismatch repair protein MLH1 which prevents recruitment of the MutL alpha complex (formed by the MLH1-PMS2 heterodimer) to the MutS alpha complex (formed by the MSH2-MSH6 heterodimer), leading to tolerance of DNA damage (PubMed:30770470). Deacetylates RHOT1/MIRO1 which blocks mitochondrial transport and mediates axon growth inhibition (By similarity). Deacetylates transcription factor SP1 which leads to increased expression of ENG, positively regulating angiogenesis (PubMed:38534334). Deacetylates KHDRBS1/SAM68 which regulates alternative splicing by inhibiting the inclusion of CD44 alternate exons (PubMed:26080397). Acts as a valine sensor by binding to valine through the primate-specific SE14 repeat region (PubMed:39567688). In valine deprivation conditions, translocates from the cytoplasm to the nucleus where it deacetylates TET2 which promotes TET2-dependent DNA demethylation, leading to DNA damage (PubMed:39567688). Promotes odontoblast differentiation following IPO7-mediated nuclear import and subsequent repression of RUNX2 expression (By similarity). In addition to its protein deacetylase activity, plays a key role in the degradation of misfolded proteins: when misfolded proteins are too abundant to be degraded by the chaperone refolding system and the ubiquitin-proteasome, mediates the transport of misfolded proteins to a cytoplasmic juxtanuclear structure called aggresome (PubMed:17846173). Probably acts as an adapter that recognizes polyubiquitinated misfolded proteins and targets them to the aggresome, facilitating their clearance by autophagy (PubMed:17846173). Involved in the MTA1-mediated epigenetic regulation of ESR1 expression in breast cancer (PubMed:24413532).

Cellular Location

Cytoplasm. Cytoplasm, cytoskeleton. Nucleus. Perikaryon {ECO:0000250|UniProtKB:Q9Z2V5}. Cell projection, dendrite {ECO:0000250|UniProtKB:Q9Z2V5}. Cell projection, axon {ECO:0000250|UniProtKB:Q9Z2V5}. Cell projection, cilium. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Cytoplasm, cytoskeleton, cilium basal body Note=Mainly cytoplasmic where it is associated with microtubules (PubMed:12024216). Can shuttle between the cytoplasm and the nucleus (PubMed:39567688). Retained in the cytoplasm by binding to valine via the primate-specific SE14 repeat region while valine deprivation induces nuclear localization (PubMed:39567688). Found exclusively in the cytoplasm in proliferative cells with a fraction found in the nucleus during differentiation (By similarity). May translocate to the nucleus following DNA damage (PubMed:30770470) {ECO:0000250|UniProtKB:Q9Z2V5, ECO:0000269|PubMed:12024216, ECO:0000269|PubMed:30770470, ECO:0000269|PubMed:39567688}

Background

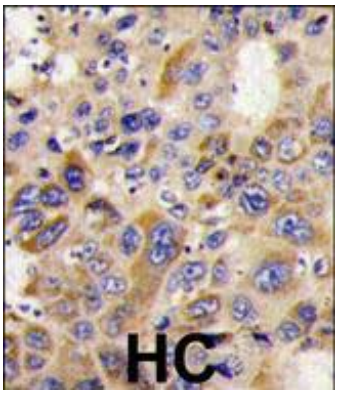
HDAC6 (histone deacetylase 6) is responsible for the deacetylation of lysine residues on the N-terminal part of the core histones (H2A, H2B, H3 and H4). Histone deacetylation gives a tag for epigenetic repression and

plays an important role in transcriptional regulation, cell cycle progression and developmental events. Histone deacetylases act via the formation of large multiprotein complexes. HDAC6 plays a central role in microtubule-dependent cell motility via deacetylation of tubulin, and has been shown to interact with HDAC11, SIRT2, and F-actin. HDAC6 is ubiquitinated, but its polyubiquitination however does not lead to degradation. HDAC is also a potential target of sumoylation.

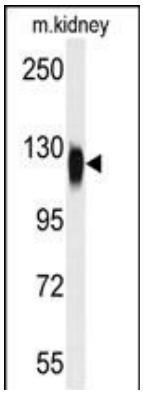
References

Hook, S.S., et al., Proc. Natl. Acad. Sci. U.S.A. 99(21):13425-13430 (2002).
Grozinger, C.M., et al., Proc. Natl. Acad. Sci. U.S.A. 96(9):4868-4873 (1999).
Wolffe, A.P., Nature 387(6628):16-17 (1997).
Pazin, M.J., et al., Cell 89(3):325-328 (1997).
Mahlknecht, U., et al., Cytogenet. Cell Genet. 93 (1-2), 135-136 (2001).

Images



Formalin-fixed and paraffin-embedded human hepatocarcinoma reacted with HDAC6 Antibody (C-term)(Cat.#AP1106a), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.



The anti-HDAC6 Pab (Cat. #AP1106a) is used in Western blot to detect HDAC6 in mouse kidney tissue lysate.

Citations

- ASK1-Mediated Phosphorylation Blocks HDAC6 Ubiquitination and Degradation to Drive the Disassembly of Photoreceptor Connecting Cilia
- Recycling endosomal CD133 functions as an inhibitor of autophagy at the pericentrosomal region.
- Deacetylation of α-tubulin and cortactin is required for HDAC6 to trigger ciliary disassembly.
- Acetylproteomic analysis reveals functional implications of lysine acetylation in human spermatozoa (sperm).
- PCM1 recruits Plk1 to the pericentriolar matrix to promote primary cilia disassembly before mitotic entry.