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HDAC6 Antibody

Catalog # ASC11826

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q9UBN7
Other Accession	NP_006035, 13128864
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	131419
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	HDAC6 body can be used for detection of HDAC6 by Western blot at 0.5 - 1 g/ml. Antibody can also be used for Immunohistochemistry starting at 5 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	10013
Other Names	Histone deacetylase 6, HD6, 3.5.1.98, HDAC6, KIAA0901
Target/Specificity	HDAC6; HDAC6 antibody is human and mouse reactive. Multiple isoforms of HDAC6 are known to exist. HDAC6 antibody is predicted to not cross-react with other members of the HDAC family.
Reconstitution & Storage	HDAC6 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	HDAC6 Antibody 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). Deacetylates PRDM16 (By similarity). 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}

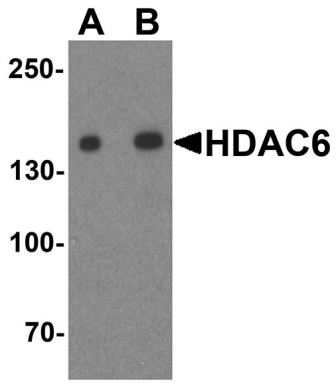
Background

The histone deacetylase (HDAC) family contains multiple members which are divided into four classes. Class II of the HDAC family comprises six members, HDAC4, 5, 6, 7, 9 and 10, each of which appear to have tissue-specific roles (1). HDAC6 contains an internal duplication of two catalytic domains which appear to function independently of each other (2). HDAC6 has been shown to be part of the microtubule network and acts as a specific alpha-tubulin deacetylase, and has been suggested to be a potential therapeutic target in neurodegenerative disease (3).

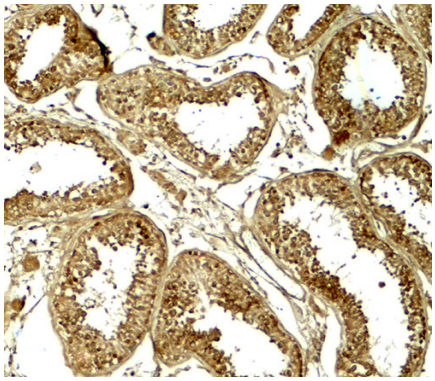
References

de Ruijter AJ, van Gennip AH, Caron HN, et al. Histone deacetylases (HDACs): characterization of the classical HDAC family. Biochem. J. 2003; 370:737-49.
Grozinger CM, Hassig CA, and Schrieber SL. Three proteins define a class of human histone deacetylases related to yeast Hda1p. Proc. Natl. Acad. Sci. USA 1999; 96:4868-73.
Li G, Jiang H, Chang M, et al. HDAC6: a-tubulin decetylase: a potential therapeutic target in neurodegenerative disease. J. Neurol. Sci. 2011; 304:1-8.

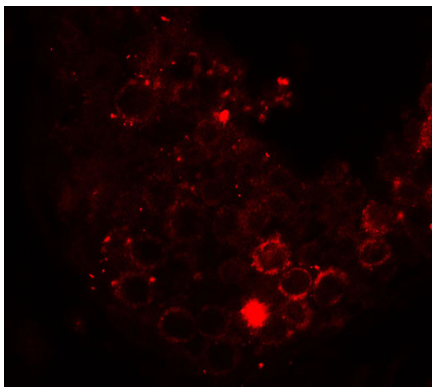
Images



Western blot analysis of HDAC6 in human testis tissue lysate with HDAC6 antibody at (A) 0.5 and (B) 1 µg/ml.



Immunohistochemistry of HDAC6 in human testis tissue with HDAC6 antibody at 5 µg/ml.



Immunofluorescence of HDAC6 in human testis tissue with HDAC6 antibody at 20 µg/ml.

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