abcam

ab264565

Anti-HDAC6 antibody [EPR22951-29] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR22951-29
Purification technique	Affinity purification Protein A
Concentration	1.006 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Mouse
Dilution info	1/30

Notes	-

Predicted

Species	Rat
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	-
Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	-
Notes	-

Not recommended

Species	Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	-
Notes	-

Predicted

Species	Rat
Dilution info	-
Notes	-

Target data

See full target information Hdac6

Function

Deacetylates a wide range of non-histone substrates (PubMed:12606581, PubMed:19893491, PubMed:26746851, PubMed:27737934, PubMed:35075301). Plays a central role in microtubule-dependent cell motility by mediating deacetylation of tubulin (PubMed:19893491, PubMed:27737934, PubMed:12606581). Required for cilia disassembly via deacetylation of alpha-tubulin (By similarity). Alpha-tubulin deacetylation results in destabilization of dynamic microtubules (PubMed:12486003). Promotes deacetylation of CTTN, leading to actin polymerization, promotion of autophagosome-lysosome fusion and completion of autophagy (By similarity). Deacetylates SQSTM1 (By similarity). Deacetylates peroxiredoxins PRDX1 and PRDX2, decreasing their reducing activity (By similarity). Deacetylates antiviral protein RIGI in the presence of viral mRNAs which is required for viral RNA detection by RIGI (PubMed:26746851). 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 (By similarity). 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 (By

similarity). 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 (By similarity). Deacetylates KHDRBS1/SAM68 which regulates alternative splicing by inhibiting the inclusion of CD44 alternate exons (By similarity). Deacetylates PRDM16 (PubMed:35075301). Promotes odontoblast differentiation following IPO7-mediated nuclear import and subsequent repression of RUNX2 expression (PubMed:35922041). 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 (By similarity). Probably acts as an adapter that recognizes polyubiquitinated misfolded proteins and target them to the aggresome, facilitating their clearance by autophagy (PubMed:22819792).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab264565 is the carrier-free version of ab239362.

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	HDAC6 or histone deacetylase 6 is a protein that primarily functions as a cytoplasmic deacetylase. It is part of the class IIb HDAC family and is known for its distinctive molecular weight of approximately 121 kDa. HDAC6 is expressed in various tissues with higher levels observed in the brain kidney and liver. This protein is unique as it contains two catalytic domains unlike other HDACs which contributes to its specific deacetylation of non-histone substrates including tubulin and Hsp90 influencing cell motility and stress response.
Biological function summary	HDAC6 plays a significant role in processes like protein degradation and cell signaling. It is an important component of the protein quality control system involving itself in the aggresome pathway where it facilitates the removal of misfolded proteins through interaction with dynein motor proteins. In addition to its presence in the cytoplasm HDAC6 influences cell migration and immune response regulation by de-phosphorylating cortactin and affecting actin filament dynamics. Its integral role in the aggresome-autophagy pathway positions it as important for cellular homeostasis maintenance.
Pathways	HDAC6 participates prominently in both autophagy and stress response pathways. In the autophagic process HDAC6 operates alongside ubiquitinated proteins to manage protein quality control. Moreover HDAC6 engages in stress response pathways like the heat shock response interacting directly with Hsp90 to regulate client protein activation. These pathways highlight HDAC6’s relationships with key proteins such as Hsp70 and tau linking it to cellular stress and neurodegeneration responses.
Associated diseases and disorders	HDAC6 exhibits connections to neurodegenerative diseases and cancer. Dysregulated HDAC6 activity associates with Alzheimer's disease where it affects tau protein accumulation and degradation. The protein is also implicated in various cancers such as breast and ovarian cancer due to its influence on cell migration and invasion. It interacts with p53 impacting apoptosis and tumor progression making HDAC6 a potential target for therapeutic interventions with HDAC6 inhibitors which aim to restore normal cellular functions disrupted by abnormal HDAC6 activity.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

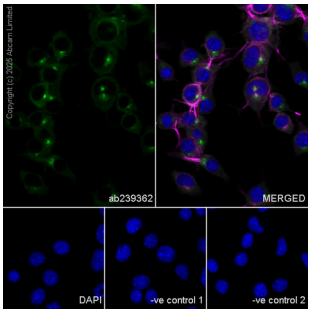
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

---

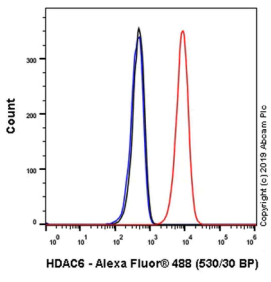
5 product images



Immunocytochemistry/ Immunofluorescence - Anti-HDAC6 antibody [EPR22951-29] - BSA and Azide free (ab264565)

HDAC6 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-HDAC6 antibody

This image was produced using ab239362, the same clone but in a different formulation. Immunofluorescent analysis of 100% methanol fixed 0.1% Triton X-100 permeabilized Neuro-2a (mouse neuroblastoma neuroblast) cells labelling HDAC6 with ab239362 at 1/200 (3 µg/ml) followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody as secondary at 1/1000 (2 µg/ml) dilution. Confocal image showing cytoplasmic staining in Neuro-2a cell line (shown in green). The counterstain was ab7291 Anti-alpha Tubulin mouse monoclonal antibody used at 1/1000 (1µg/ml) followed by ab150120 Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) as secondary for the counterstain used at 1/1000 (2µg/ml) observed in magenta. Nuclear DNA was labelled with DAPI (shown in blue). Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8). Negative control 1: ab239362 with ab150120 as secondary. Negative control 2: ab7291 with ab150081 as secondary.

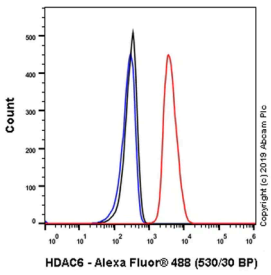


Flow Cytometry (Intracellular) - Anti-HDAC6 antibody [EPR22951-29] - BSA and Azide free (ab264565)

HDAC6 Flow Cytometry (Intracellular) staining using rabbit Anti-HDAC6 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized Neuro-2a (Mouse neuroblastoma neuroblast) cells labeling HDAC6 with ab239362 at 1\600 (Red) compared with a Rabbit monoclonal IgG (ab172730) / Black isotype control and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 was used as the secondary antibody.

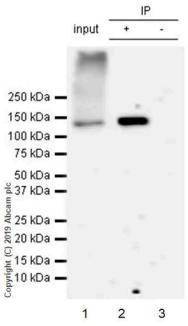
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab239362).



Flow Cytometry (Intracellular) - Anti-HDAC6 antibody [EPR22951-29] - BSA and Azide free (ab264565)

HDAC6 Flow Cytometry (Intracellular) staining using rabbit Anti-HDAC6 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized NIH/3T3 (Mouse embryonic fibroblast) cells labeling HDAC6 with ab239362 at 1\600 (Red) compared with a Rabbit monoclonal IgG (ab172730) / Black isotype control and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 was used as the secondary antibody.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab239362).



Immunoprecipitation - Anti-HDAC6 antibody [EPR22951-29] - BSA and Azide free (ab264565)

HDAC6 was immunoprecipitated from 0.35 mg mouse brain lysate 10µg with ab239362 at 1/30 dilution (2µg in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab239362 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366) was used at 1/5000 dilution.
Lane 1: Mouse brain lysate 10µg

Lane 2: ab239362 IP in mouse brain lysate

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab239362 in mouse brain lysate

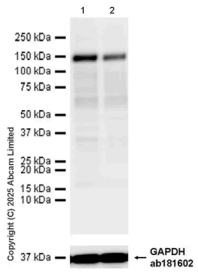
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 3 mins.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab239362).

All lanes:
Immunoprecipitation - Anti-HDAC6 antibody [EPR22951-29] (ab239362)

Predicted band size: 131 kDa



Western blot - Anti-HDAC6 antibody [EPR22951-29] - BSA and Azide free (ab264565)

HDAC6 Western blot staining using rabbit Anti-HDAC6 antibody

This data was developed using ab239362, the same antibody clone in a different buffer formulation.
Blocking and diluting buffer and concentration: 5% NFDM/TBST.

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.

All lanes:

Western blot - Anti-HDAC6 antibody [EPR22951-29] (ab239362) at 1/1000 dilution

Lane 1:
NIH/3T3 (mouse embryonic fibroblast) transfected with scrambled siRNA control whole cell lysate at 20 µg

Lane 2:
NIH/3T3 transfected with siRNA specifically targeting HDAC6, whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Observed band size: 130 kDa, 36 kDa

Exposure time: 4s

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.