abcam

ab219376

Anti-HDAC3 antibody [Y415] - 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	Y415
Purification technique	Affinity purification Protein A
Specificity	This antibody may detect splice isoform 2 (RPD3-2A).
Concentration	1.024 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-

Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

WB

Expected

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

ICC/IF

Tested

Species	Human
Dilution info	-

Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information HDAC3

Function

Histone deacetylase that catalyzes the deacetylation of lysine residues on the N-terminal part of the core histones (H2A, H2B, H3 and H4), and some other non-histone substrates (PubMed:21030595, PubMed:21444723, PubMed:23911289, PubMed:25301942, PubMed:28167758, PubMed:28497810, PubMed:32404892, PubMed:22230954). Histone deacetylation gives a tag for epigenetic repression and plays an important role in transcriptional regulation, cell cycle progression and developmental events (PubMed:23911289). Histone deacetylases act via the formation of large multiprotein complexes, such as N-Cor repressor complex, which activate the histone deacetylase activity (PubMed:23911289, PubMed:22230954). Participates in the BCL6 transcriptional repressor activity by deacetylating the H3 'Lys-27' (H3K27) on enhancer elements, antagonizing EP300 acetyltransferase activity and repressing proximal gene expression (PubMed:23911289). Acts as a molecular chaperone for shuttling phosphorylated NR2C1 to PML bodies for sumoylation (By similarity). Contributes, together with XBP1 isoform 1, to the activation of NFE2L2-mediated HMOX1 transcription factor gene expression in a PI(3)K/mTORC2/Akt-dependent signaling pathway leading to

endothelial cell (EC) survival under disturbed flow/oxidative stress (PubMed:25190803). Regulates both the transcriptional activation and repression phases of the circadian clock in a deacetylase activity-independent manner (By similarity). During the activation phase, promotes the accumulation of ubiquitinated BMAL1 at the E-boxes and during the repression phase, blocks FBXL3-mediated CRY1/2 ubiquitination and promotes the interaction of CRY1 and BMAL1 (By similarity). The NCOR1-HDAC3 complex regulates the circadian expression of the core clock gene BMAL1 and the genes involved in lipid metabolism in the liver (By similarity). Also functions as a deacetylase for non-histone targets, such as KAT5, MEF2D, MAPK14, RARA and STAT3 (PubMed:15653507, PubMed:21030595, PubMed:21444723, PubMed:25301942, PubMed:28167758). Serves as a corepressor of RARA, mediating its deacetylation and repression, leading to inhibition of RARE DNA element binding (PubMed:28167758). In association with RARA, plays a role in the repression of microRNA-10a and thereby in the inflammatory response (PubMed:28167758). In addition to protein deacetylase activity, also acts as a protein-lysine deacylase by recognizing other acyl groups: catalyzes removal of (2E)-butenoyl (crotonyl), lactoyl (lactyl), 2-hydroxyisobutanoyl (2-hydroxyisobutyryl) and isonicotinyl acyl groups from lysine residues, leading to protein decrotonylation, delactylation, de-2-hydroxyisobutyrylation and deisonicotinylation, respectively (PubMed:28497810, PubMed:29192674, PubMed:34608293, PubMed:34545082, PubMed:35044827). Catalyzes decrotonylation of MAPRE1/EB1 (PubMed:34608293). Mediates delactylation NBN/NBS1, thereby inhibiting DNA double-strand breaks (DSBs) via homologous recombination (HR) (PubMed:38961290).

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

ab219376 is the carrier-free version of ab32369.

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	HDAC3 or Histone Deacetylase 3 belongs to the class I histone deacetylases and plays an important mechanical role in epigenetic regulation by removing acetyl groups from histone proteins which causes chromatin condensation and gene expression modulation. Often referred to by its alternate name 3g6 HDAC3 has a molecular weight of approximately 49 kDa. The protein expresses broadly in various tissues including the brain liver and heart highlighting its widespread regulatory function across different body systems.
Biological function summary	HDAC3 acts as part of the nuclear receptor corepressor complex engaging with other subunits to modify chromatin structure and gene transcription. This protein influences various cellular processes such as cell cycle regulation and apoptosis. By altering chromatin architecture HDAC3 modulates the expression of numerous genes supporting cellular homeostasis and response to environmental signals.
Pathways	The HDAC3 protein integrates into key signaling networks including the Notch and NF-kB pathways. Within the Notch signaling pathway HDAC3 interacts with proteins like CSL modulating transcriptional responses critical for cell differentiation and developmental processes. In the NF-kB pathway it influences inflammation and immune responses by regulating the transcription of inflammatory genes showcasing its role in mediating complex signaling cascades.
Associated diseases and disorders	HDAC3 is pivotal in the development and progression of various diseases such as cancer and neurodegenerative disorders. The dysregulation of HDAC3 activity can lead to abnormal cell proliferation and impaired cell death contributing to tumor growth. In neurodegenerative conditions HDAC3 interacts with proteins like tau potentially influencing tau-related pathologies. HDAC3 inhibitors are under investigation for therapeutic approaches to these challenging medical conditions highlighting its relevance in disease management.

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

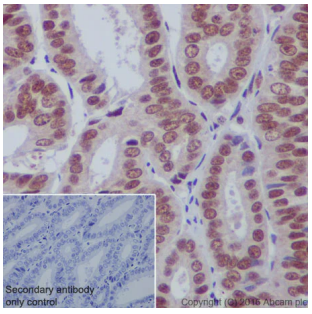
We do not recommend this combination. It is not covered by our product promise.

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.

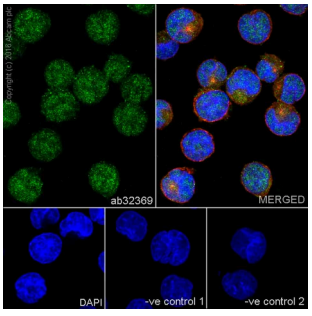
6 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HDAC3 antibody [Y415] - BSA and Azide free (ab219376)

HDAC3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-HDAC3 antibody

Immunohistochemical analysis of paraffin-embedded human endometrial carcinoma sections labelling HDAC3 with purified ab32369 at dilution of 1:50. The secondary antibody used was ab97051; a goat anti-rabbit IgG H&L (HRP) at dilution of 1/500. The sample was counterstained with hematoxylin. Antigen retrieval was performed using EDTA Buffer; pH 9.0. PBS was used instead of the primary antibody as the negative control and is shown in the inset.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab32369).



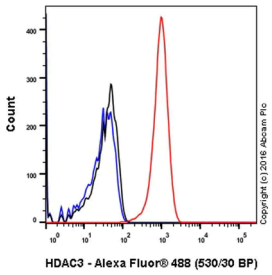
Immunocytochemistry/ Immunofluorescence - Anti-HDAC3 antibody [Y415] - BSA and Azide free (ab219376)

HDAC3 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-HDAC3 antibody

Immunocytochemistry/Immunofluorescence analysis of K562 cells labelling HDAC3 with purified ab32369 at 1/500. Cells were fixed with 4% Paraformaldehyde and permeabilized using 0.1% Triton X-100. ab150077, Alexa Fluor®488-conjugated goat anti-rabbit IgG (1/1000) was used as the

secondary antibody. Cells were co-stained with ab7291, a mouse anti-tubulin antibody (1/1000) using ab150120, an Alexa Fluor®594-conjugated goat anti-mouse IgG (1/1000) as the secondary. Nuclei were counterstained with DAPI (blue).
For negative control 1, rabbit primary antibody and anti-mouse secondary antibody (ab150120) were used and for negative control 2, mouse primary antibody (ab7291) and anti-rabbit secondary antibody (ab150077) were used.

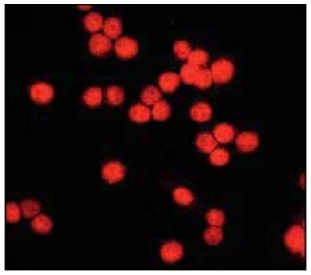
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab32369).



Flow Cytometry (Intracellular) - Anti-HDAC3 antibody [Y415] - BSA and Azide free (ab219376)

HDAC3 Flow Cytometry (Intracellular) staining using rabbit Anti-HDAC3 antibody

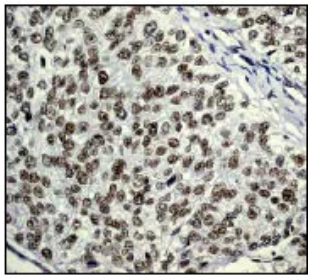
Intracellular Flow Cytometry analysis of HeLa (human cervix adenocarcinoma) cells labeling HDAC3 with purified ab32369 at 1/30 dilution (10ug/mL) (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. A Goat anti rabbit IgG (Alexa Fluor®488) (1/2000 dilution) was used as the secondary antibody. Rabbit monoclonal IgG (Black) was used as the isotype control, cells without incubation with primary antibody and secondary antibody (Blue) were used as the unlabeled control.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab32369).



Immunocytochemistry/ Immunofluorescence - Anti-HDAC3 antibody [Y415] - BSA and Azide free (ab219376)

HDAC3 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-HDAC3 antibody

Immunofluorescent staining of HeLa cells
using ab32369 at 1/250 dilutionThis data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab32369).

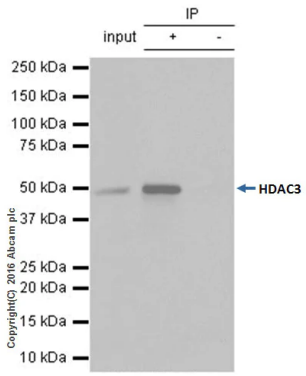


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HDAC3 antibody [Y415] - BSA and Azide free (ab219376)

HDAC3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-HDAC3 antibody

Paraffin-embedded human ovary carcinoma
ab32369 at 1/250 dilution
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab32369).

Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Immunoprecipitation - Anti-HDAC3 antibody [Y415] - BSA and Azide free (ab219376)

Purified ab32369 at 1/20 immunoprecipitating HDAC3 in K562 whole cell lysate observed at 49 KDa (lanes 1 and 2).
Lane 1 (input): K562 whole cell lysate 10ug

Lane 2 (+): ab32369 + K562 whole cell lysate.

Lane 3 (-): Rabbit monoclonal IgG (ab172730) instead of ab32369 in K562 whole cell lysate

The Detection Reagent used was VeriBlot for IP (HRP) (ab131366) at dilution of 1/1000.

Blocking/Diluting buffer 5% NFDM/TBST.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab32369).

All lanes:
Immunoprecipitation - Anti-HDAC3 antibody [Y415] (ab32369)

Predicted band size: 48 kDa

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