abcam

ab32369

Anti-HDAC3 antibody [Y415]

Anti-HDAC3 antibody [Y415] (ab32369) is a rabbit monoclonal antibody detecting HDAC3 in **Western Blot, Flow Cytometry (Intra), IP, IHC-P, ICC/IF**. Suitable for **Human, Mouse, Rat**.

- Biophysical QC for unrivalled batch-batch consistency
- Over 60 publications
- Trusted since 2006

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.12% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	Y415
Purification technique	Affinity purification Protein A
Specificity	This antibody may detect splice isoform 2 (RPD3-2A).
Concentration	2.085 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/50
Notes	**For unpurified use at 1/250 - 1/500.** Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Expected

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

IP

Tested

Species	Human
Dilution info	1/20 - 1/50
Notes	-

Expected

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

WB

Tested

Species	Mouse
Dilution info	1/5000 - 1/10000
Notes	-

Species	Rat
Dilution info	1/5000 - 1/10000

Notes	-

Species	Human
Dilution info	1/5000 - 1/10000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/250 - 1/500
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/30
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
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	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C

Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

What is this antibody validated in?
Anti-HDAC3 antibody [Y415] (ab32369) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunoprecipitation (IP), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human, Mouse, Rat samples.

What is the molecular weight of HDAC3?
Anti-HDAC3 [Y415] (ab32369) specifically detects a band for HDAC3 (UniProt: O15379) at a molecular weight of 49kDa.

Trusted by the scientific community
Anti-HDAC3 [Y415] (ab32369) was first used in a scientific publication in 2006 and has been cited over 60 times in peer-reviewed journals.

Reviewed by scientists
Anti-HDAC3 [Y415] (ab32369) has over 5 independent reviews from customers.

Other related products
We have a range of other formats of antibody clone [Y415] also available for your convenience: ab32369, HRP - ab208356, Carrier free - ab219376, APC - ab310854, PE - ab310923, Alexa Fluor® 488 - ab310969, Alexa Fluor® 647 - ab311086, Alexa Fluor® 594 - ab311683, Alexa Fluor® 568 - ab312958, Alexa Fluor® 555 - ab313167, Alexa Fluor® 750 - ab321594

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.

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size antibodies.

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

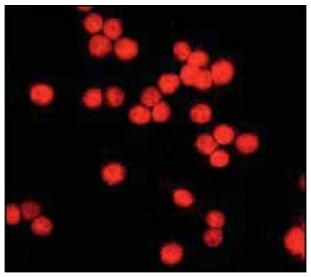
We do not recommend this combination. It is not covered by our product promise.

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.

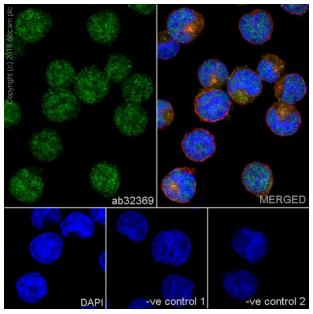
8 product images



Immunocytochemistry/ Immunofluorescence - Anti-HDAC3 antibody [Y415] (ab32369)

HDAC3 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-HDAC3 antibody

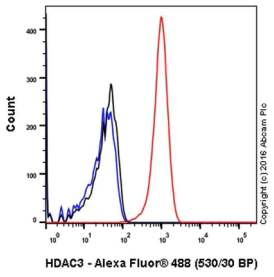
Immunofluorescent staining of HeLa cells using ab32369 at 1/250 dilution



Immunocytochemistry/ Immunofluorescence - Anti-HDAC3 antibody [Y415] (ab32369)

HDAC3 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-HDAC3 antibody

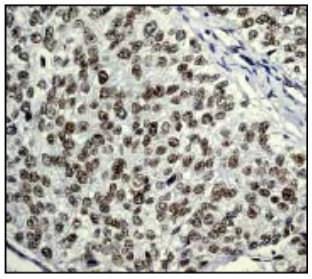
Immunocytochemistry/Immunofluorescence analysis of K562 cells labelling HDAC3 with purified ab32369 at 1/500. Cells were fixed with 4% Paraformaldehyde and permeabilized using 0.1% Triton X-100. ab150077, Alexa Fluor®488-conjugated goat anti-rabbit IgG (1/1000) was used as the secondary antibody. Cells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



Flow Cytometry (Intracellular) - Anti-HDAC3 antibody [Y415] (ab32369)

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

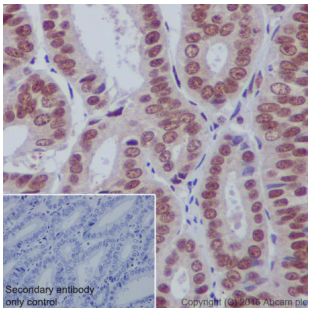
Intracellular Flow Cytometry analysis of HeLa (human cervix adenocarcinoma) cells labeling HDAC3 with purified ab32369 at 1/30 dilution (10ug/mL) (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. A Goat anti rabbit IgG (Alexa Fluorr®488) (1/2000 dilution) was used 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.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HDAC3 antibody [Y415] (ab32369)

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

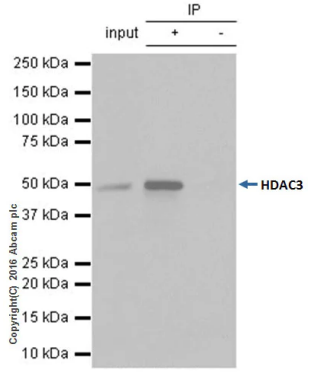
Paraffin-embedded human ovary carcinoma
ab32369 at 1/250 dilution
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HDAC3 antibody [Y415] (ab32369)

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.



Immunoprecipitation - Anti-HDAC3 antibody [Y415] (ab32369)

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.

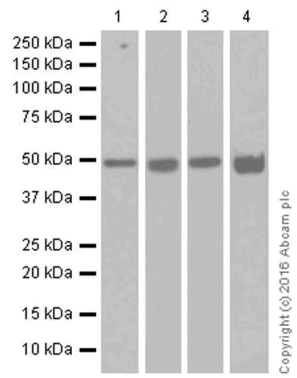
Lane 3 (-): Rabbit monoclonal IgG (ab172730) instead of ab32369 in K562 whole cell lysate

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

Blocking/Diluting buffer 5% NFDM/TBST.

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

Predicted band size: 48 kDa



Western blot - Anti-HDAC3 antibody [Y415] (ab32369)

HDAC3 Western blot staining using rabbit Anti-HDAC3 antibody

Blocking/Diluting buffer 5% NFDM/TBST
All lanes:
Western blot - Anti-HDAC3 antibody [Y415] (ab32369) at 1/5000 dilution

Lane 1:
K562 (human chronic myelogenous leukemia) whole cell lysate at 20 µg

Lane 2:
HeLa (human cervix adenocarcinoma) whole cell lysate at 20 µg

Lane 3:
NIH/3T3 (mouse embryo) whole cell lysate at 20 µg

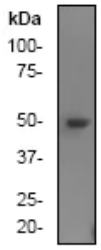
Lane 4:
C6 (rat glioma) whole cell lysate at 20 µg

Secondary

All lanes:
Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/2000 dilution

Predicted band size: 48 kDa

Observed band size: 49 kDa



Western blot - Anti-HDAC3 antibody [Y415] (ab32369)

All lanes:
Western blot - Anti-HDAC3 antibody [Y415] (ab32369) at 1/10000 dilution

All lanes:
K562 cell lysate

Predicted band size: 48 kDa

Observed band size: 49 kDa

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