abcam

ab219053

Anti-HDAC2 antibody [EPR20117]

Recombinant | RabMAb | Advanced Validation | KO Validated | 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), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR20117
Purification technique	Affinity purification Protein A
Concentration	0.522 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ChIC/CUT&RUN-seq

Tested

Species	Human
Dilution info	5 µg
Notes	-

Expected

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

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Expected

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

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/500
Notes	-

Expected

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

IHC-P

Tested

Species	Mouse
Dilution info	1/4000

Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/4000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Human
Dilution info	1/4000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Target data

See full target information HDAC2

Function

Histone deacetylase that catalyzes the deacetylation of lysine residues on the N-terminal part of the core histones (H2A, H2B, H3 and H4) (PubMed:28497810). Histone deacetylation gives a tag for epigenetic repression and plays an important role in transcriptional regulation, cell cycle progression and developmental events (By similarity). Histone deacetylases act via the formation of large multiprotein complexes (By similarity). Forms transcriptional repressor complexes by associating with MAD, SIN3, YY1 and N-COR (PubMed:12724404). Component of a RCOR/GFI/KDM1A/HDAC complex that suppresses, via histone deacetylase (HDAC) recruitment, a number of genes implicated in multilineage blood cell development (By similarity). Acts as a component of the histone deacetylase NuRD complex which participates in the remodeling of chromatin (PubMed:16428440, PubMed:28977666). Component of the SIN3B complex that represses transcription and counteracts the histone acetyltransferase activity of EP300 through the recognition H3K27ac marks by PHF12 and the activity of the histone deacetylase HDAC2 (PubMed:37137925). Also deacetylates non-histone targets: deacetylates TSHZ3, thereby regulating its transcriptional repressor activity (PubMed:19343227). May be involved in the transcriptional repression of circadian target genes, such as PER1, mediated by CRY1 through histone deacetylation (By similarity). Involved in MTA1-mediated transcriptional corepression of TFF1 and CDKN1A (PubMed:21965678). 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) and 2-hydroxyisobutanoyl (2-hydroxyisobutyryl) acyl groups from lysine residues, leading to protein decrotonylation, delactylation and de-2-hydroxyisobutyrylation, respectively (PubMed:28497810, PubMed:29192674, PubMed:35044827).

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

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.

Supplementary info

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

Activity summary	HDAC2 or Histone Deacetylase 2 is an important enzyme that plays a role in chromatin remodeling and gene expression regulation. It removes acetyl groups from histone tails allowing chromatin to condense and silencing gene expression. HDAC2 has a molecular weight of approximately 55 kDa. It is expressed in various tissues including brain heart and skeletal muscles indicating its importance in different physiological areas. HDAC2 proteins are often studied using methods like HDAC2 ELISA and HDAC2 anticuero in research settings.
Biological function summary	HDAC2 is involved in cell cycle regulation and differentiation. It is part of the co-repressor complex and interacts with other proteins such as Sin3 and NuRD to repress transcription. These interactions are vital for maintaining normal cellular functions and ensuring proper response to external signals. This protein is also connected to HEK293T cells which are a common model in scientific studies due to their robust expression of proteins like HDAC2.

Pathways	HDAC2 participates in the regulation of transcriptional activity and cellular stress response. It is an important player in the histone modification pathway interacting with proteins such as HDAC1 and transcriptional regulators like REST. HDAC2 is also linked with the Notch signaling pathway which is essential for cell fate decisions. These pathways highlight its role in both maintaining cellular homeostasis and adapting to changes in the cellular environment.
Associated diseases and disorders	HDAC2 has a significant connection to neurodegenerative diseases and various cancers. Alzheimer's disease for instance shows altered expression levels of HDAC2 affecting synaptic plasticity and memory formation. In cancer HDAC2 interacts with oncogenic proteins such as p53 influencing tumor progression and metastasis. Monitoring HDAC2 levels and activity could provide insights into disease mechanisms and potential therapeutic targets.

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

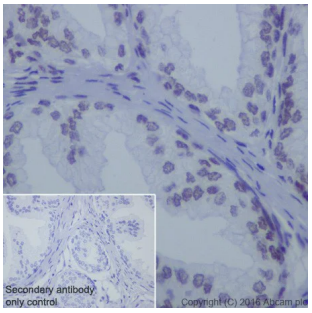
We do not recommend this combination. It is not covered by our product promise.

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.

23 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HDAC2 antibody [EPR20117] (ab219053)

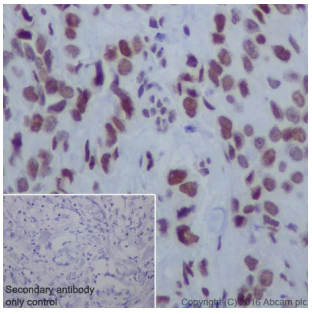
HDAC2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-HDAC2 antibody

Immunohistochemical analysis of paraffin-embedded human prostate hyperplasia tissue labeling HDAC2 with ab219053 at 1/4000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use.
Nuclear staining on luminal epithelial cells of human prostate hyperplasia; negative staining on basal cells.

Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HDAC2 antibody [EPR20117] (ab219053)

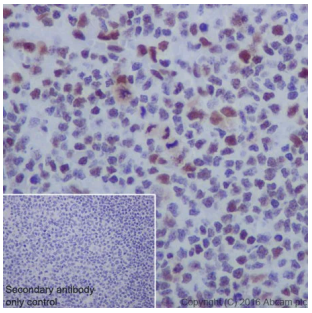
HDAC2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-HDAC2 antibody

Immunohistochemical analysis of paraffin-embedded human breast cancer tissue labeling HDAC2 with ab219053 at 1/4000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use.
Nuclear staining on tumor cells of human breast cancer is observed.

Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HDAC2 antibody [EPR20117] (ab219053)

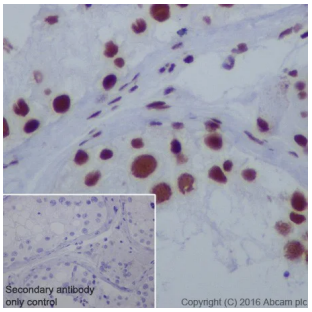
HDAC2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-HDAC2 antibody

Immunohistochemical analysis of paraffin-embedded human tonsil tissue labeling HDAC2 with ab219053 at 1/4000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use.
Nuclear staining on lymphocytes of human tonsil is observed.

Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HDAC2 antibody [EPR20117] (ab219053)

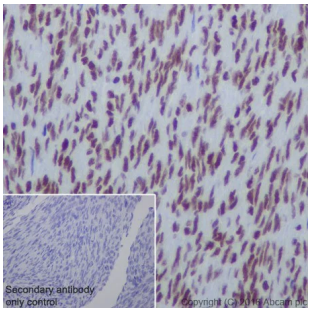
HDAC2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-HDAC2 antibody

Immunohistochemical analysis of paraffin-embedded human testis tissue labeling HDAC2 with ab219053 at 1/4000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use.
Nuclear staining on human testis is observed.

Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HDAC2 antibody [EPR20117] (ab219053)

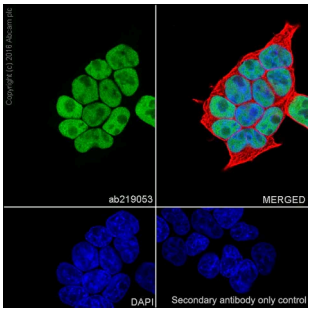
HDAC2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-HDAC2 antibody

Immunohistochemical analysis of paraffin-embedded human synovial sarcoma tissue labeling HDAC2 with ab219053 at 1/4000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use.
Nuclear staining on human synovial sarcoma is observed.

Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-HDAC2 antibody [EPR20117] (ab219053)

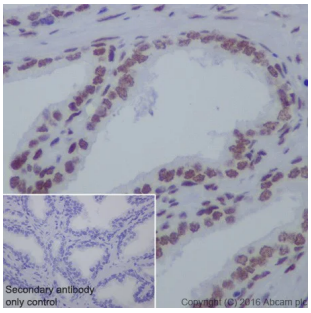
HDAC2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-HDAC2 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HEK-293 (Human epithelial cell line from embryonic kidney) cells labeling HDAC2 with ab219053 at 1/1000 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green).
Confocal image showing nuclear staining on HEK-293 cell line.

The nuclear counterstain is DAPI (blue).

Tubulin is detected with ab195889 (Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594)) at 1/200 dilution (red).

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) at 1/1000 dilution.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HDAC2 antibody [EPR20117] (ab219053)

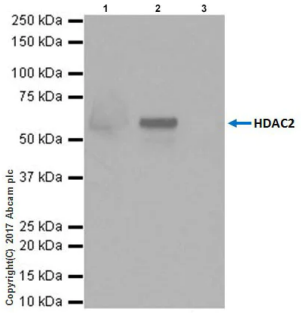
HDAC2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-HDAC2 antibody

Immunohistochemical analysis of paraffin-embedded human prostate cancer tissue labeling HDAC2 with ab219053 at 1/4000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use.
Nuclear Nuclear staining on tumor cells of prostate cancer; weak or negative staining on basal cells.

Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunoprecipitation - Anti-HDAC2 antibody [EPR20117] (ab219053)

HDAC2 was immunoprecipitated from 0.35 mg of HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate with ab219053 at 1/30 dilution.
Western blot was performed from the immunoprecipitate using ab219053 at 1/1000 dilution.

VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/10000 dilution.

Lane 1: HeLa whole cell lysate 10 µg (Input).

Lane 2: ab219053 IP in HeLa whole cell lysate.

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab219053 in HeLa whole cell lysate.

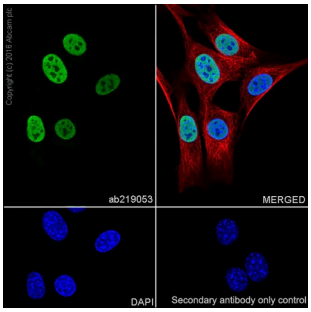
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 1 second.

All lanes:
Immunoprecipitation - Anti-HDAC2 antibody [EPR20117] (ab219053)

Predicted band size: 55 kDa

Observed band size: 55 kDa



Immunocytochemistry/ Immunofluorescence - Anti-HDAC2 antibody [EPR20117] (ab219053)

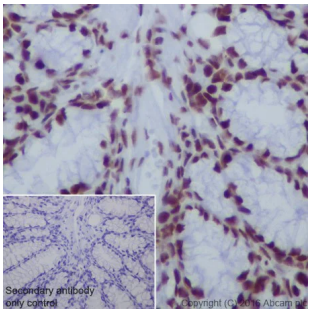
HDAC2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-HDAC2 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized NIH/3T3 (Mouse embryonic fibroblast cell line) cells labeling HDAC2 with ab219053 at 1/1000 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green).
Confocal image showing nuclear staining on NIH/3T3 cell line.

The nuclear counterstain is DAPI (blue).

Tubulin is detected with ab195889 (Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594)) at 1/200 dilution (red).

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) at 1/1000 dilution.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HDAC2 antibody [EPR20117] (ab219053)

HDAC2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-HDAC2 antibody

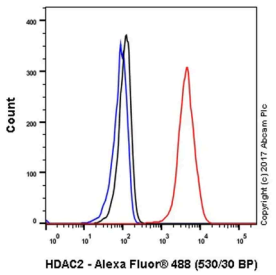
Immunohistochemical analysis of paraffin-embedded mouse colon tissue labeling HDAC2 with ab219053 at 1/4000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

Nuclear staining on mouse colon is observed.

Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

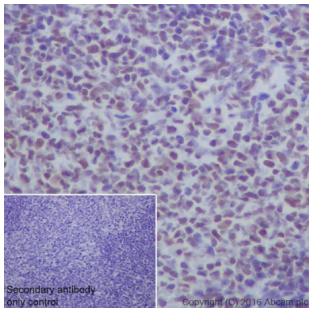
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-HDAC2 antibody [EPR20117] (ab219053)

HDAC2 Flow Cytometry (Intracellular) staining using rabbit Anti-HDAC2 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed NIH/3T3 (Mouse embryonic fibroblast cell line) cells labeling HDAC2 with ab219053 at 1/500 dilution (red) compared with a rabbit monoclonal IgG isotype control (ab172730; black) and an unlabeled control (cells without incubation with primary antibody and secondary antibody; blue). Goat anti rabbit IgG (Alexa Fluor® 488) at 1/2000 dilution was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HDAC2 antibody [EPR20117] (ab219053)

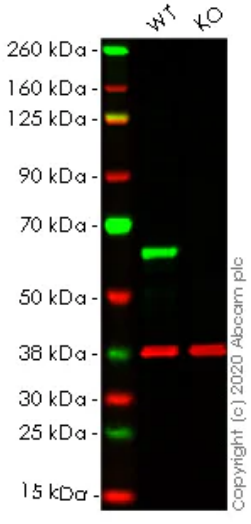
HDAC2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-HDAC2 antibody

Immunohistochemical analysis of paraffin-embedded rat spleen tissue labeling HDAC2 with ab219053 at 1/4000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use.
Nuclear staining on rat spleen is observed.

Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Western blot - Anti-HDAC2 antibody [EPR20117] (ab219053)

HDAC2 Western blot staining using rabbit Anti-HDAC2 antibody

Lanes 1- 2: Merged signal (red and green). Green - ab219053 observed at 55 kDa. Red - Anti-GAPDH antibody [6C5] - Loading Control (ab8245) observed at 37 kDa.
ab219053 was shown to react with HDAC2 in wild-type HEK-293T cells in western blot. Loss of signal was observed when knockout cell line ab266589 (knockout cell lysate ab256938) was used. Wild-type HEK-293T and HDAC2 knockout HEK-293T cell lysates were subjected to SDS-PAGE. Membrane was blocked for 1 hour at room temperature in 0.1% TBST with 3% non-fat dried milk. ab219053 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) overnight at 4°C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye®800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye®680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-HDAC2 antibody [EPR20117] (ab219053) at 1/1000 dilution

Lane 1:
Wild-type HEK-293T cell lysate at 20 µg

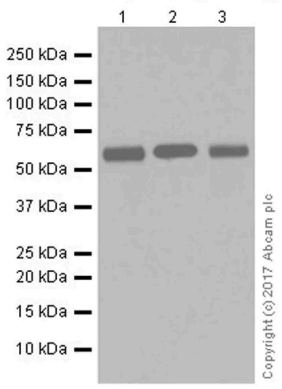
Lane 2:
HDAC2 knockout HEK-293T cell lysate at 20 µg

Lane 2:
Western blot - Human HDAC2 knockout HEK-293T cell line (ab266589)

Performed under reducing conditions.

Predicted band size: 55 kDa

Observed band size: 55 kDa



Western blot - Anti-HDAC2 antibody [EPR20117] (ab219053)

HDAC2 Western blot staining using rabbit Anti-HDAC2 antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-HDAC2 antibody [EPR20117] (ab219053) at 1/5000 dilution

Lane 1:
HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate at 20 µg

Lane 2:
SH-SY5Y (Human neuroblastoma cell line from bone marrow) whole cell lysate at 20 µg

Lane 3:
HEK-293 (Human epithelial cell line from embryonic kidney) whole cell lysate at 20 µg

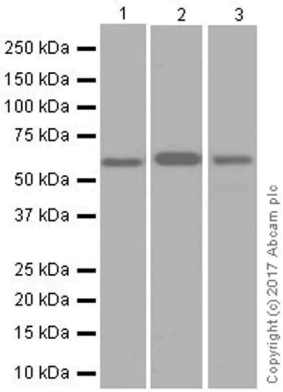
Secondary

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

Predicted band size: 55 kDa

Observed band size: 55 kDa

Exposure time: 10s



Western blot - Anti-HDAC2 antibody [EPR20117] (ab219053)

HDAC2 Western blot staining using rabbit Anti-HDAC2 antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
Exposure time: Lane 1: 3 minutes; Lane 2: 15 seconds; Lane 3: 2 seconds.

All lanes:
Western blot - Anti-HDAC2 antibody [EPR20117] (ab219053) at 1/5000 dilution

Lane 1:
Human fetal brain lysate at 10 µg

Lane 2:
Human fetal heart lysate at 10 µg

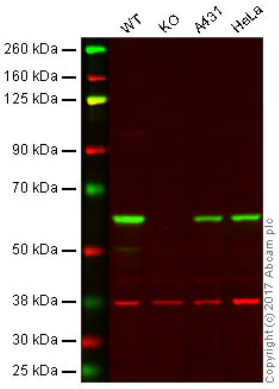
Lane 3:
Human fetal kidney lysate at 10 µg

Secondary

All lanes:
Western blot - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/4000 dilution

Predicted band size: 55 kDa

Observed band size: 55 kDa



Western blot - Anti-HDAC2 antibody [EPR20117] (ab219053)

Lanes 1 - 4: Merged signal (red and green). Green - ab219053 observed at 55 kDa. Red - loading control, ab9484, observed at 37 kDa.
ab219053 was shown to specifically react with HDAC2 in wild type cells as signal was lost in HDAC2 knockout cells. Wild-type and HDAC2 knockout samples were subjected to SDS-PAGE. ab219053 and ab9484 (Mouse anti-GAPDH loading control) were incubated overnight at 4°C at 1/1000 dilution and 1/20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed ab216773 and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed ab216776 secondary antibodies at 1/20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-HDAC2 antibody [EPR20117] (ab219053) at 1/1000 dilution

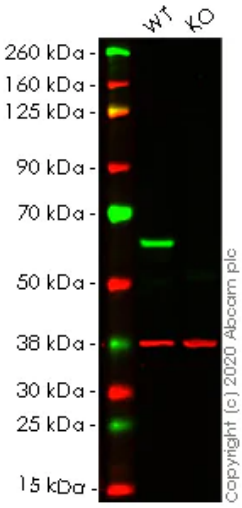
Lane 1:
Wild-type HAP1 whole cell lysate at 20 µg

Lane 2:
HDAC2 knockout HAP1 whole cell lysate at 20 µg

Lane 3:
A431 whole cell lysate at 20 µg

Lane 4:
HeLa whole cell lysate at 20 µg

Predicted band size: 55 kDa



Western blot - Anti-HDAC2 antibody [EPR20117] (ab219053)

HDAC2 Western blot staining using rabbit Anti-HDAC2 antibody

Lanes 1-2: Merged signal (red and green). Green - ab219053 observed at 60 kDa. Red - loading control ab8245 observed at 37 kDa.
ab219053 Anti-HDAC2 antibody [EPR20117] was shown to specifically react with HDAC2 in wild-type HEK-293T cells. Loss of signal was observed when knockout cell line ab266588 (knockout cell lysate ab256937) was used. Wild-type and HDAC2 knockout samples were subjected to SDS-PAGE. ab219053 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) were incubated overnight at 4°C at 1 in 1000 and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-HDAC2 antibody [EPR20117] (ab219053) at 1/1000 dilution

Lane 1:
Wild-type HEK-293T cell lysate at 20 µg

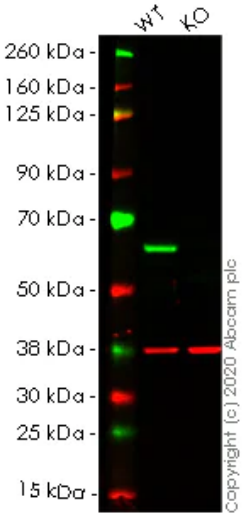
Lane 2:
HDAC2 knockout HEK-293T cell lysate at 20 µg

Lane 2:
Western blot - Human HDAC2 knockout HEK-293T cell line (ab266588)

Performed under reducing conditions.

Predicted band size: 55 kDa

Observed band size: 60 kDa



Western blot - Anti-HDAC2 antibody [EPR20117] (ab219053)

HDAC2 Western blot staining using rabbit Anti-HDAC2 antibody

Lanes 1-2: Merged signal (red and green). Green - ab219053 observed at 60 kDa. Red - loading control ab8245 observed at 37 kDa.
ab219053 Anti-HDAC2 antibody [EPR20117] was shown to specifically react with HDAC2 in wild-type HEK-293T cells. Loss of signal was observed when knockout cell line ab266590 (knockout cell lysate ab256939) was used. Wild-type and HDAC2 knockout samples were subjected to SDS-PAGE. ab219053 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) were incubated overnight at 4°C at 1 in 1000 and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-HDAC2 antibody [EPR20117] (ab219053) at 1/1000 dilution

Lane 1:
Wild-type HEK-293T cell lysate at 20 µg

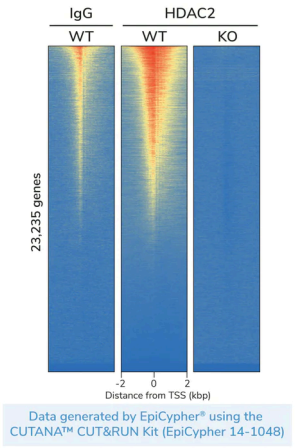
Lane 2:
HDAC2 knockout HEK-293T cell lysate at 20 µg

Lane 2:
Western blot - Human HDAC2 knockout HEK-293T cell line (ab266590)

Performed under reducing conditions.

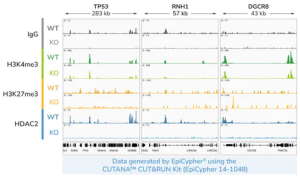
Predicted band size: 55 kDa

Observed band size: 60 kDa



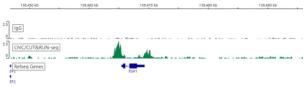
ChIC/CUT&RUN sequencing - Anti-HDAC2 antibody [EPR20117] (ab219053)

CUT&RUN profiling with HDAC2 antibody demonstrates robust genome-wide enrichment in wild-type (WT) cells, which is markedly diminished in HDAC2 knockout (KO) cells. Heatmaps of genome-wide signal flanking annotated transcription start sites (TSSs, +/- 2 kbp) display CUT&RUN data generated using the CUTANA™ CUT&RUN Kit (EpiCypher 14-1048) with HDAC2 antibody (Abcam ab219053, 0.5 µg). 500,000 HEK293T WT or KO (Abcam ab266590) cells were used per reaction. IgG antibody was included as a negative control to assess non-specific background. Libraries were prepared using the CUTANA™ CUT&RUN Library Prep Kit (EpiCypher 14-1001). Sequencing was performed with paired-end 50 bp reads, and data were processed on CUTANA™ Cloud (cloud.epicypher.com) by alignment to the hg38 genome. Heatmaps were generated using deepTools (Ramнrez et al., Nucleic Acids Res. 2014; PMID: 24799436). Row-linked data are ranked by intensity relative to HDAC2 WT, with red indicating high localized enrichment and blue denoting background. Validated antibodies show genome-wide enrichment above IgG background consistent with HDAC2 binding in WT cells and near complete loss of signal in KO cells.



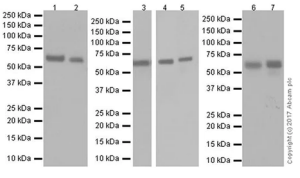
ChIC/CUT&RUN sequencing - Anti-HDAC2 antibody [EPR20117] (ab219053)

CUT&RUN profiling with HDAC2 antibody reveals the expected genomic enrichment pattern in wild-type (WT) cells, which is substantially reduced in HDAC2 knockout (KO) cells. Representative genome browser tracks show CUT&RUN data generated using the CUTANA™ CUT&RUN Kit (EpiCypher 14-1048) with HDAC2 antibody (Abcam ab219053, 0.5 µg). 500,000 HEK293T WT or KO (Abcam ab266590) cells were used per reaction. IgG, H3K4me3, and H3K27me3 antibodies were included as controls to assess non-specific background, active promoters, and repressed chromatin, respectively. Libraries were prepared using the CUTANA™ CUT&RUN Library Prep Kit (EpiCypher 14-1001). Sequencing was performed with paired-end 50 bp reads, and data were processed on CUTANA™ Cloud (cloud.epicypher.com) by alignment to the hg38 genome. Images were generated using Integrative Genomics Viewer (IGV, Broad Institute).



ChIC/CUT&RUN sequencing - Anti-HDAC2 antibody [EPR20117] (ab219053)

ChIC/CUT&RUN was performed using a pAG-MNAse at a final concentration of 700 ng/mL, 2 x 10^5 K-562 (Human chronic myelogenous leukemia lymphoblast) cells and 5µg of ab219053 [EPR20117]. The resulting DNA was sequenced on the Illumina NovaSeq 6000 to a depth of 10 million reads. The negative IgG control ab172730 is also shown. Additional screenshots of mapped reads can be found in the Protocol booklet in the Product Protocol section. The University of Geneva owns patents relevant to ChIC (Chromatin Immuno-Cleavage) methods.



Western blot - Anti-HDAC2 antibody [EPR20117] (ab219053)

Blocking/Dilution buffer: 5% NFDM/TBST.
Exposure time: Lane 1/2: 15 seconds; Lane 3: 30 seconds; Lane 4/5: 3 seconds; Lane 6/7: 1 second.

Lanes 1 - 5:
Western blot - Anti-HDAC2 antibody [EPR20117] (ab219053) at 1/1000 dilution

Lanes 6 - 7:
Western blot - Anti-HDAC2 antibody [EPR20117] (ab219053) at 1/5000 dilution

Lane 1:
Mouse brain lysate at 10 µg

Lane 2:
Mouse heart lysate at 10 µg

Lane 3:
Rat heart lysate at 10 µg

Lane 4:
Rat brain lysate at 10 µg

Lane 5:
Rat spleen lysate at 10 µg

Lane 6:
PC-12 (Rat adrenal gland pheochromocytoma cell line) whole cell lysate at 10 µg

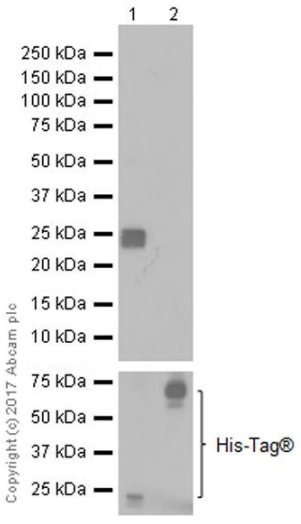
Lane 7:
NIH/3T3 (Mouse embryonic fibroblast cell line) whole cell lysate at 10 µg

Secondary

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

Predicted band size: 11 kDa, 55 kDa

Observed band size: 55 kDa



Western blot - Anti-HDAC2 antibody [EPR20117] (ab219053)

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-HDAC2 antibody [EPR20117] (ab219053) at 1/1000 dilution

Lane 1:
His-tagged human HDAC2 recombinant protein (aa339-488) at 0.01 µg

Lane 2:
His-tagged human HDAC1 recombinant protein (aa1-482) at 0.01 µg

Secondary

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

Predicted band size: 55 kDa

Observed band size: 22 kDa

Exposure time: 1s

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