abcam

ab251562

Anti-HDAC1+HDAC2 antibody [EPR20327] - 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	EPR20327
Purification technique	Affinity purification Protein A
Concentration	1.063 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Mouse, Human
Dilution info	-

Notes	-

Expected

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

IP

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

WB

Tested

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

IHC-P

Tested

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

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

Expected

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

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

Notes

ab251562 is the carrier-free version of ab219054.

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	HDAC1 and HDAC2 also known as histone deacetylases 1 and 2 are enzyme molecules with masses of approximately 55 kDa each. Mechanically HDAC1 and HDAC2 remove acetyl groups from histone proteins which affects chromatin structure and transcription regulation. These proteins exert their function within the nucleus of eukaryotic cells. They are expressed in various tissues but have significant levels in the brain heart and muscles.
Biological function summary	HDAC1 and HDAC2 function together as part of larger multiprotein complexes such as the Sin3 and NuRD complexes. These enzymes play key roles in the repression of gene expression. By altering the acetylation status of histones they contribute to chromatin condensation silencing certain gene areas. Their activity is necessary for proper development cell proliferation and differentiation. Scientists have observed that HDACs help maintain stem cell pluripotency and regulate cell cycle progression.
Pathways	HDAC1 and HDAC2 are integral to signaling pathways involved in DNA repair and cell cycle regulation. Specifically they impact the Notch and Wnt pathways which are essential for cell communication and cellular events like apoptosis and differentiation. Notably HDAC1 and HDAC2 interact with proteins such as Rb (retinoblastoma protein) and E2F transcription factors influencing cellular progression through the cell cycle and thereby affecting cell fate decisions.
Associated diseases and disorders	HDAC1 and HDAC2 have links to cancer and neurological disorders. Their dysregulation can result in aberrant gene expression profiles contributing to tumorigenesis and cancer progression. For instance overexpression of HDACs in various cancers has been reported suggesting that these enzymes facilitate oncogenic processes. HDAC1 and HDAC2 also connect to neurodegenerative diseases by influencing proteins like those involved in Alzheimer's disease; their role in chromatin remodeling and gene expression impacts neuronal cell survival and function.

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.

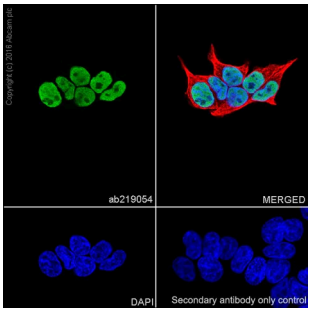
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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16 product images



Immunocytochemistry/ Immunofluorescence - Anti-HDAC1+HDAC2 antibody [EPR20327] - BSA and Azide free (ab251562)

HDAC1+HDAC2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-HDAC1+HDAC2 antibody

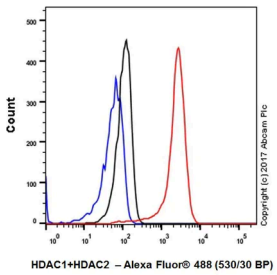
This data was developed using ab219054, the same antibody clone in a different buffer formulation.
Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HEK-293 (Human epithelial cell line from embryonic kidney) cells labeling HDAC1 + HDAC2 with ab219054 at 1/1000 dilution, 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).

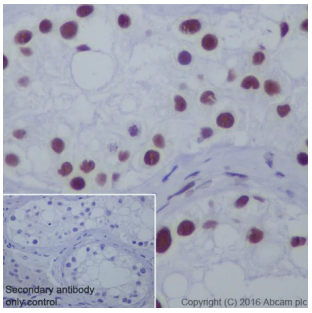
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) at 1/1000 dilution.



Flow Cytometry (Intracellular) - Anti-HDAC1+HDAC2 antibody [EPR20327] - BSA and Azide free (ab251562)

HDAC1+HDAC2 Flow Cytometry (Intracellular) staining using rabbit Anti-HDAC1+HDAC2 antibody

This data was developed using ab219054, the same antibody clone in a different buffer formulation.
Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed HeLa (Human epithelial cell line from cervix adenocarcinoma) cells labeling HDAC1 + HDAC2 with ab219054 at 1/700 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-HDAC1+HDAC2 antibody [EPR20327] - BSA and Azide free (ab251562)

HDAC1+HDAC2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-HDAC1+HDAC2 antibody

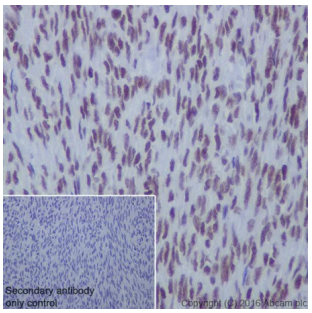
This data was developed using ab219054, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded human testis tissue labeling HDAC1 + HDAC2 with ab219054 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

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-HDAC1+HDAC2 antibody [EPR20327] - BSA and Azide free (ab251562)

HDAC1+HDAC2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-HDAC1+HDAC2 antibody

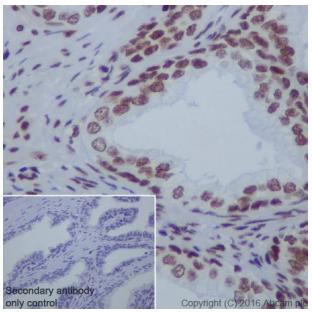
This data was developed using ab219054, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded human synovial sarcoma tissue labeling HDAC1 + HDAC2 with ab219054 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

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.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HDAC1+HDAC2 antibody [EPR20327] - BSA and Azide free (ab251562)

HDAC1+HDAC2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-HDAC1+HDAC2 antibody

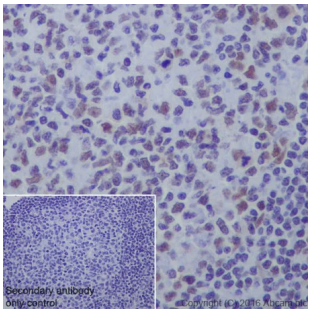
This data was developed using ab219054, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded human prostate cancer tissue labeling HDAC1 + HDAC2 with ab219054 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

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.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HDAC1+HDAC2 antibody [EPR20327] - BSA and Azide free (ab251562)

HDAC1+HDAC2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-HDAC1+HDAC2 antibody

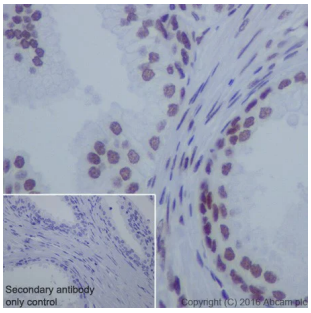
This data was developed using ab219054, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded human tonsil tissue labeling HDAC1 + HDAC2 with ab219054 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

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-HDAC1+HDAC2 antibody [EPR20327] - BSA and Azide free (ab251562)

HDAC1+HDAC2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-HDAC1+HDAC2 antibody

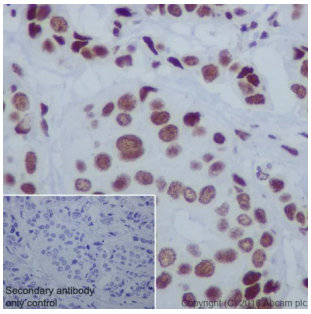
This data was developed using ab219054, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded human prostate hyperplasia tissue labeling HDAC1 + HDAC2 with ab219054 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

Nuclear staining on luminal epithelial cells of human prostate hyperplasia, but 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-HDAC1+HDAC2 antibody [EPR20327] - BSA and Azide free (ab251562)

HDAC1+HDAC2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-HDAC1+HDAC2 antibody

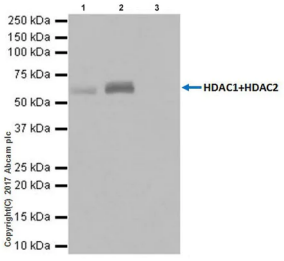
This data was developed using ab219054, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded human breast cancer tissue labeling HDAC1 + HDAC2 with ab219054 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

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.



Immunoprecipitation - Anti-HDAC1+HDAC2 antibody [EPR20327] - BSA and Azide free (ab251562)

This data was developed using ab219054, the same antibody clone in a different buffer formulation.
HDAC1 + HDAC2 was immunoprecipitated from 0.35 mg of HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate with ab219054 at 1/30 dilution.

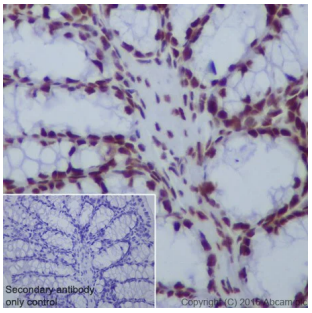
Western blot was performed from the immunoprecipitate using ab219054 at 1/1000 dilution.

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: ab219054 IP in HeLa whole cell lysate.
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab219054 in HeLa whole cell lysate.

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

Exposure time: 1 second.
All lanes:
Immunoprecipitation - Anti-HDAC1 + HDAC2 antibody [EPR20327] (ab219054)



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HDAC1+HDAC2 antibody [EPR20327] - BSA and Azide free (ab251562)

HDAC1+HDAC2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-HDAC1+HDAC2 antibody

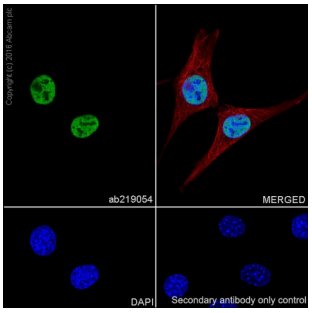
This data was developed using ab219054, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded mouse colon tissue labeling HDAC1 + HDAC2 with ab219054 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

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.



Immunocytochemistry/ Immunofluorescence - Anti-HDAC1+HDAC2 antibody [EPR20327] - BSA and Azide free (ab251562)

HDAC1+HDAC2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-HDAC1+HDAC2 antibody

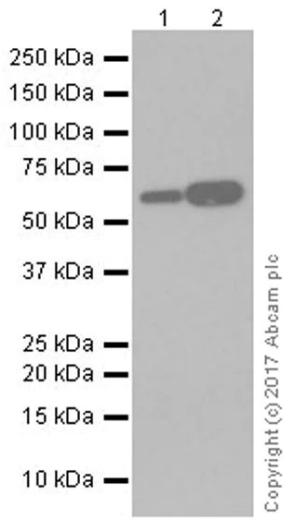
This data was developed using ab219054, the same antibody clone in a different buffer formulation.
Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized NIH/3T3 (Mouse embryonic fibroblast cell line) cells labeling HDAC1 + HDAC2 with ab219054 at 1/1000 dilution, followed 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.



Western blot - Anti-HDAC1+HDAC2 antibody [EPR20327] - BSA and Azide free (ab251562)

This data was developed using ab219054, the same antibody clone in a different buffer formulation.
Blocking and dilution buffer: 5% NFDM/TBST.

All lanes:
Western blot - Anti-HDAC1 + HDAC2 antibody [EPR20327] (ab219054) at 1/1000 dilution

Lane 1:
Human fetal heart lysate at 10 µg

Lane 2:
Human fetal kidney lysate at 10 µg

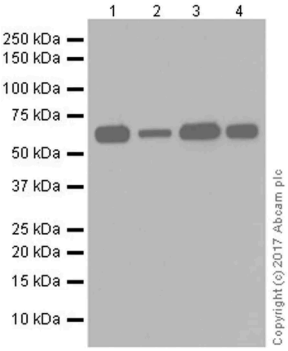
Secondary

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

Exposure time: 3min



Western blot - Anti-HDAC1+HDAC2 antibody [EPR20327] - BSA and Azide free (ab251562)

HDAC1+HDAC2 Western blot staining using rabbit Anti-HDAC1+HDAC2 antibody

This data was developed using ab219054, the same antibody clone in a different buffer formulation.
Blocking and dilution buffer: 5% NFDM/TBST.

All lanes:
Western blot - Anti-HDAC1 + HDAC2 antibody [EPR20327] (ab219054) at 1/2000 dilution

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

Lane 2:
LNCaP (Human prostate cancer cell line) whole cell lysate at 20 µg

Lane 3:
SH-SY5Y (Human neuroblastoma cell line from bone marrow) whole cell lysate at 20 µg

Lane 4:
293 (Human epithelial cell line from embryonic kidney) whole cell lysate at 20 µg

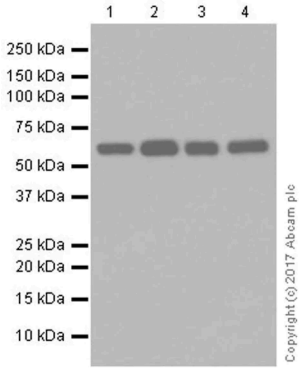
Secondary

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: 5s



Western blot - Anti-HDAC1+HDAC2 antibody [EPR20327] - BSA and Azide free (ab251562)

HDAC1+HDAC2 Western blot staining using rabbit Anti-HDAC1+HDAC2 antibody

This data was developed using ab219054, the same antibody clone in a different buffer formulation.
Blocking and dilution buffer: 5% NFDM/TBST.

All lanes:
Western blot - Anti-HDAC1 + HDAC2 antibody [EPR20327] (ab219054) at 1/1000 dilution

Lane 1:
C6 (Rat glial tumor cell line) whole cell lysate at 10 µg

Lane 2:
RAW 264.7 (Mouse macrophage cell line transformed with Abelson murine leukemia virus) whole cell lysate at 10 µg

Lane 3:
PC-12 (Rat adrenal gland pheochromocytoma cell line) whole cell lysate at 10 µg

Lane 4:
NIH/3T3 (Mouse embryonic fibroblast cell line) whole cell lysate at 10 µg

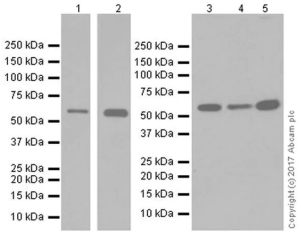
Secondary

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

Predicted band size: 55 kDa

Observed band size: 55 kDa

Exposure time: 5s



Western blot - Anti-HDAC1+HDAC2 antibody [EPR20327] - BSA and Azide free (ab251562)

HDAC1+HDAC2 Western blot staining using rabbit Anti-HDAC1+HDAC2 antibody

This data was developed using ab219054, the same antibody clone in a different buffer formulation.
Blocking and dilution buffer: 5% NFDM/TBST.

Exposure time: Lanes 1, 3-5: 3 minutes; Lane 2: 10 seconds.

All lanes:
Western blot - Anti-HDAC1 + HDAC2 antibody [EPR20327] (ab219054) at 1/1000 dilution

Lane 1:
Mouse brain lysate at 10 µg

Lane 2:
Mouse spleen lysate at 10 µg

Lane 3:
Rat brain lysate at 10 µg

Lane 4:
Rat kidney lysate at 10 µg

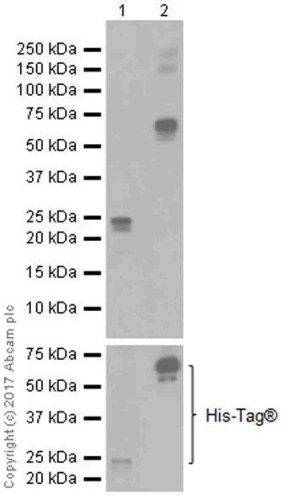
Lane 5:
Rat spleen lysate at 10 µg

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



Western blot - Anti-HDAC1+HDAC2 antibody [EPR20327] - BSA and Azide free (ab251562)

This data was developed using ab219054, the same antibody clone in a different buffer formulation.
Blocking and dilution buffer: 5% NFDM/TBST.

All lanes:
Western blot - Anti-HDAC1 + HDAC2 antibody [EPR20327] (ab219054) at 1/10000 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, 60 kDa

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