abcam

ab219054

Anti-HDAC1 + HDAC2 antibody [EPR20327]

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), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR20327
Purification technique	Affinity purification Protein A
Concentration	0.786 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

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	Human
Dilution info	1/700
Notes	-

Expected

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

IHC-P

Tested

Species	Mouse
Dilution info	1/1000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Human
Dilution info	1/1000
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	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	HDAC1 and HDAC2 also known as histone deacetylase 1 and 2 are enzymes that remove acetyl groups from histone proteins leading to chromatin condensation and transcriptional repression. HDAC1 has a molecular weight of approximately 62 kDa and is expressed in various cell types including those in the central nervous system heart and immune cells. HDAC2 shares similar expression patterns with a molecular weight around 55 kDa. Both proteins play a role in regulating gene expression by altering chromatin structure.
Biological function summary	Both HDAC1 and HDAC2 are components of large multiprotein complexes such as the Sin3 NuRD and CoREST complexes which are involved in transcriptional regulation. These complexes facilitate the deacetylation of histones transcription factors and other cellular proteins influencing cell cycle progression differentiation and development. HDAC1 and HDAC2 modulate cellular activities impacting cell proliferation and survival.
Pathways	HDAC1 and HDAC2 participate in key cellular processes particularly the cell cycle and apoptosis pathways. These enzymes closely interact with proteins like pRb and E2F influencing the transition between different cell cycle phases. HDAC1 and HDAC2 also connect with tumor suppressor protein p53 affecting apoptotic pathways. By modulating these pathways they play an essential role in maintaining cellular homeostasis.
Associated diseases and disorders	HDAC1 and HDAC2 are pertinent to certain cancers and neurodegenerative diseases. Their aberrant activity links to cancer progression influencing genes involved in cell cycle regulation. Overexpression or dysregulation may contribute to the development of cancer types such as leukemia. In neurodegenerative diseases particularly Huntington's disease abnormal HDAC1 and HDAC2 activity impacts pathways involving neuroplasticity and neuron survival. Shared interactions with proteins like p53 highlight their significance in disease mechanisms.

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.

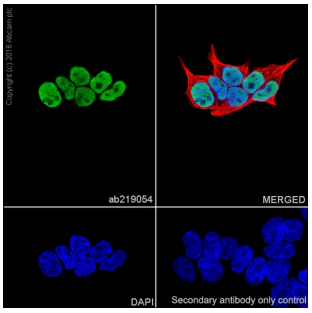
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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] (ab219054)

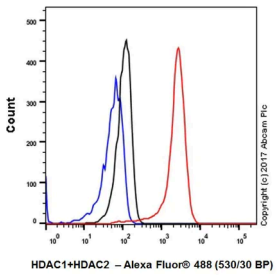
HDAC1 + HDAC2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-HDAC1 + HDAC2 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed 0.1% Triton X-100 permeabilized HEK-293 (Human epithelial cell line from embryonic kidney) cells labeling 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).

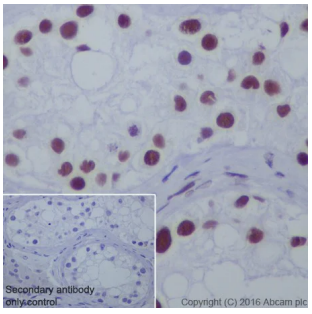
Secondary antibody only control: Used PBS instead of primary antibody secondary antibody is Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) at 1/1000 dilution.



Flow Cytometry (Intracellular) - Anti-HDAC1 + HDAC2 antibody [EPR20327] (ab219054)

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

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed HeLa (Human epithelial cell linefrom 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] (ab219054)

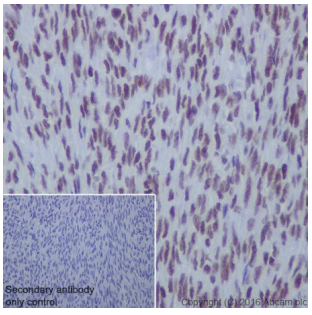
HDAC1 + HDAC2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-HDAC1 + HDAC2 antibody

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] (ab219054)

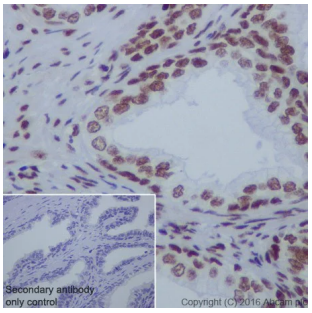
HDAC1 + HDAC2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-HDAC1 + HDAC2 antibody

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] (ab219054)

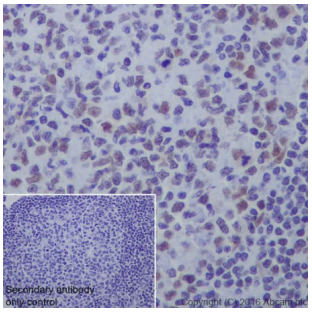
HDAC1 + HDAC2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-HDAC1 + HDAC2 antibody

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] (ab219054)

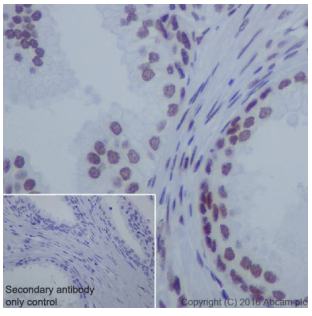
HDAC1 + HDAC2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-HDAC1 + HDAC2 antibody

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] (ab219054)

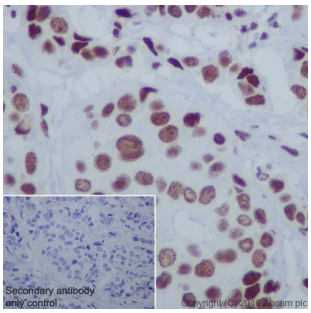
HDAC1 + HDAC2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-HDAC1 + HDAC2 antibody

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] (ab219054)

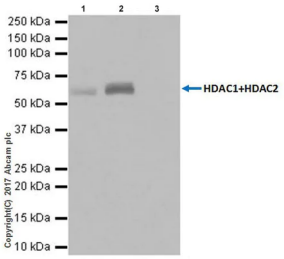
HDAC1 + HDAC2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-HDAC1 + HDAC2 antibody

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] (ab219054)

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).

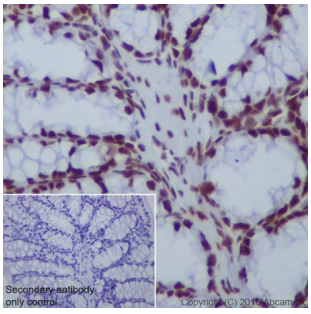
Lane 2: ab219054 IP in HeLa whole cell lysate.

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] (ab219054)

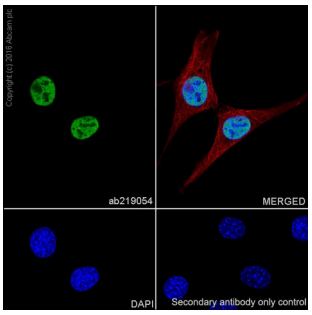
HDAC1 + HDAC2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-HDAC1 + HDAC2 antibody

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] (ab219054)

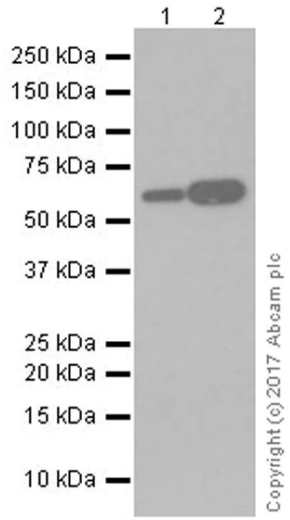
HDAC1 + HDAC2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-HDAC1 + HDAC2 antibody

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] (ab219054)

Blocking/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

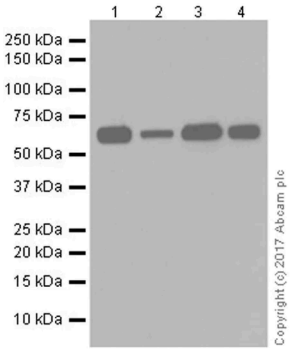
Secondary

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] (ab219054)

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

Blocking/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

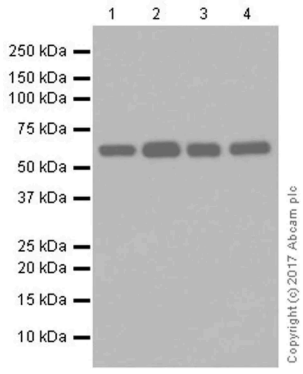
Secondary

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] (ab219054)

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

Blocking/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

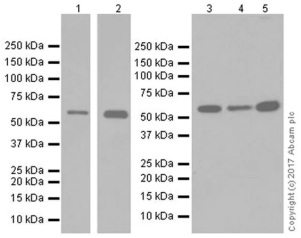
Secondary

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] (ab219054)

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

Blocking/Dilution buffer: 5% NFDM/TBST.
Exposure time: Lane 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

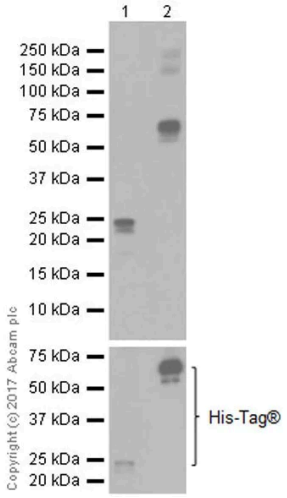
Lane 5:
Rat spleen lysate at 10 µg

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] (ab219054)

Blocking/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'.