abcam

Product datasheet

Anti-HDAC2 antibody [EPR20117] ab219053

KO VALIDATED Recombinant RabMAb

17 Images

Overview

Product name	Anti-HDAC2 antibody [EPR20117]
Description	Rabbit monoclonal [EPR20117] to HDAC2
Host species	Rabbit
Tested applications	**Suitable for:** IHC-P, Flow Cyt, ICC/IF, IP, WB
Species reactivity	**Reacts with:** Mouse, Rat, Human
Immunogen	Recombinant fragment within Human HDAC2 aa 300 to the C-terminus. The exact sequence is proprietary. Database link: Q92769
Positive control	WB: His-tagged human HDAC2 recombinant protein (aa339-488); HeLa, SH-SY5Y, HEK-293, PC-12 and NIH/3T3 whole cell lysates; Human fetal brain, fetal heart and fetal kidney lysates; Mouse brain and heart lysates; Rat heart, brain and spleen lysates. IHC-P: Human testis, tonsil, prostate hyperplasia, prostate cancer, breast cancer and synovial sarcoma tissues; mouse colon tissue and rat spleen tissue. ICC/IF: HEK-293 and NIH/3T3 cells. Flow Cyt: NIH/3T3 cells. IP: HeLa whole cell lysate.
General notes	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 production For more information see here. Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle.
Storage buffer	Preservative: 0.01% Sodium azide Constituents: 59% PBS, 40% Glycerol, 0.05% BSA

Purity	Protein A purified
Clonality	Monoclonal
Clone number	EPR20117
Isotype	IgG

Applications

Our Abpromise guarantee covers the use of **ab219053** in the following tested applications.

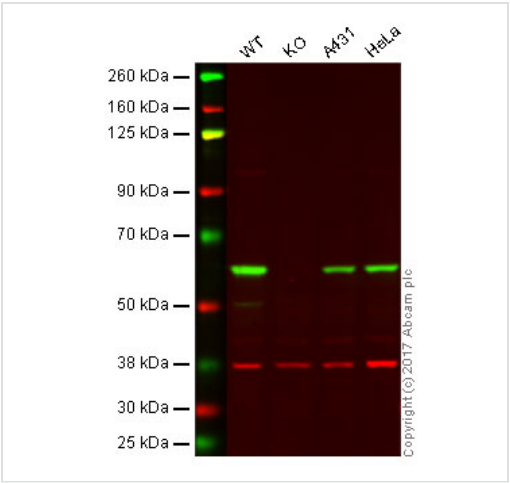
The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
IHC-P		1/4000. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.
Flow Cyt		1/500.
ICC/IF		1/1000.
IP		1/30.
WB		1/1000. Detects a band of approximately 55 kDa (predicted molecular weight: 55 kDa).

Target

Function	Responsible for the deacetylation of lysine residues on the N-terminal part of the core histones (H2A, H2B, H3 and H4). Histone deacetylation gives a tag for epigenetic repression and plays an important role in transcriptional regulation, cell cycle progression and developmental events. Histone deacetylases act via the formation of large multiprotein complexes. Forms transcriptional repressor complexes by associating with MAD, SIN3, YY1 and N-COR. Interacts in the late S-phase of DNA-replication with DNMT1 in the other transcriptional repressor complex composed of DNMT1, DMAP1, PCNA, CAF1. Deacetylates TSHZ3 and regulates its transcriptional repressor activity.
Tissue specificity	Widely expressed; lower levels in brain and lung.
Sequence similarities	Belongs to the histone deacetylase family. HD type 1 subfamily.
Post-translational modifications	S-nitrosylated by GAPDH. In neurons, S-Nitrosylation at Cys-262 and Cys-274 does not affect the enzyme activity but abolishes chromatin-binding, leading to increases acetylation of histones and activate genes that are associated with neuronal development. In embryonic cortical neurons, S-Nitrosylation regulates dendritic growth and branching.
Cellular localization	Nucleus.

Images

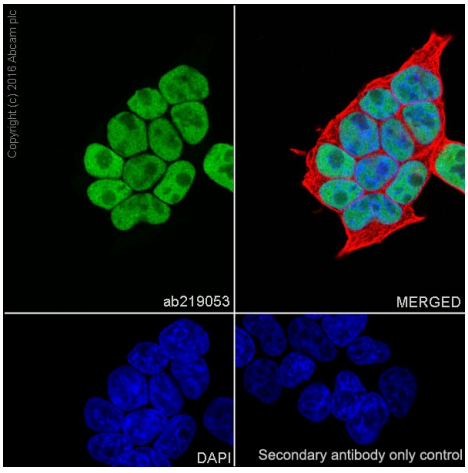


Western blot - Anti-HDAC2 antibody [EPR20117] (ab219053)

Lane 1: Wild type HAP1 whole cell lysate (20 µg)
Lane 2: HDAC2 knockout HAP1 whole cell lysate (20 µg)
Lane 3: A431 whole cell lysate (20 µg)
Lane 4: HeLa whole cell lysate (20 µg)

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.



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

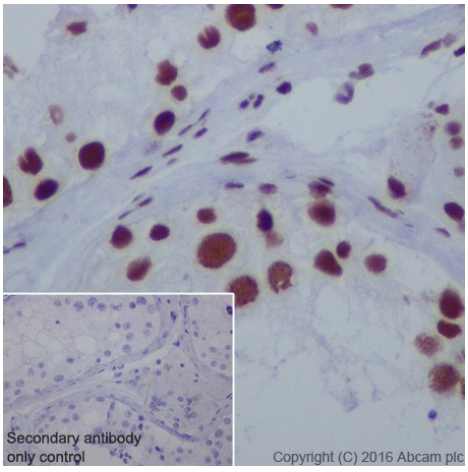
Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HEK-293 (Human epithelial cell line from embryonic kidney) cells labeling HDAC2 with ab219053 at 1/1000 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution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

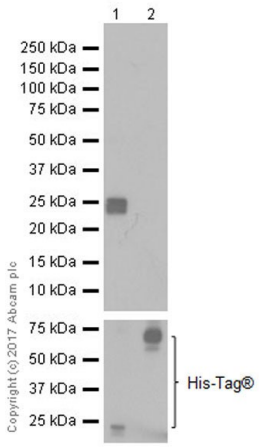
Immunohistochemical analysis of paraffin-embedded human testis tissue labeling HDAC2 with ab219053 at 1/4000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

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.



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

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

Lane 1 : His-tagged human HDAC2 recombinant protein (aa339-488)
Lane 2 : His-tagged human HDAC1 recombinant protein (aa1-482)

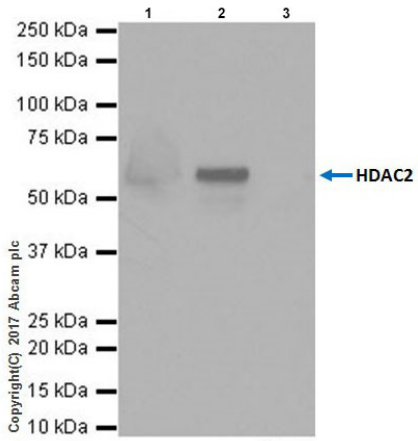
Lysates/proteins at 0.01 µg per lane.

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

Predicted band size: 55 kDa
Observed band size: 22 kDa
why is the actual band size different from the predicted?

Exposure time: 1 second

Blocking/Dilution buffer: 5% NFDM/TBST.



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.

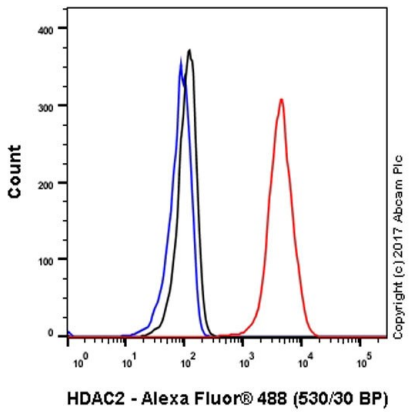
Lane 1: HeLa whole cell lysate 10 µg (Input).

Lane 2: ab219053 IP in HeLa whole cell lysate.

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

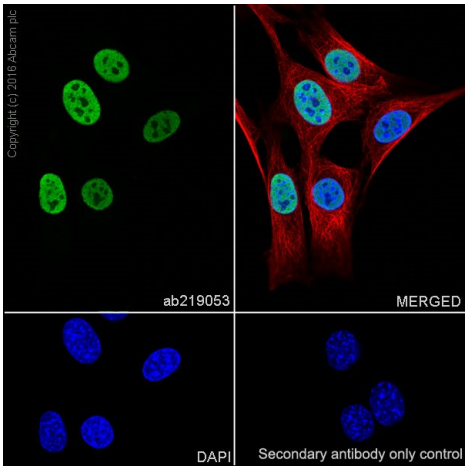
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 1 second.



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

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.



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

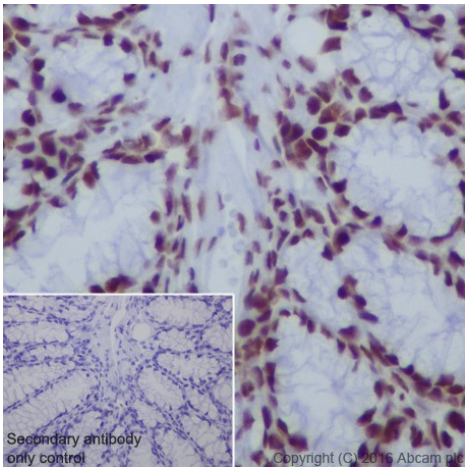
Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized NIH/3T3 (Mouse embryonic fibroblast cell line) cells labeling HDAC2 with ab219053 at 1/1000 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green).

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)

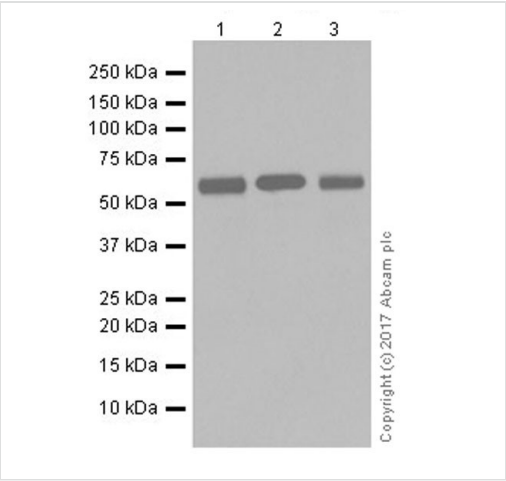
Immunohistochemical analysis of paraffin-embedded mouse colon tissue labeling HDAC2 with ab219053 at 1/4000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

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.



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

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

Lane 1 : HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate
Lane 2 : SH-SY5Y (Human neuroblastoma cell line from bone marrow) whole cell lysate
Lane 3 : HEK-293 (Human epithelial cell line from embryonic kidney) whole cell lysate

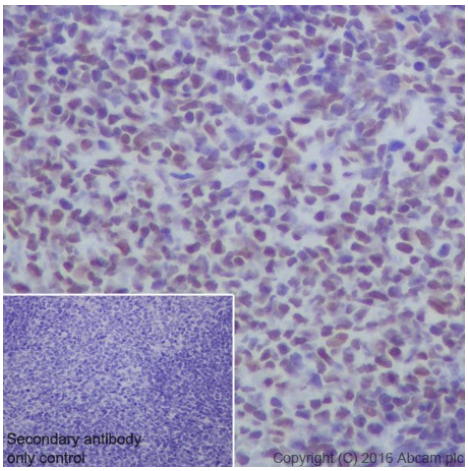
Lysates/proteins at 20 µg per lane.

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

Predicted band size: 55 kDa
Observed band size: 55 kDa

Exposure time: 10 seconds

Blocking/Dilution buffer: 5% NFDM/TBST.



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

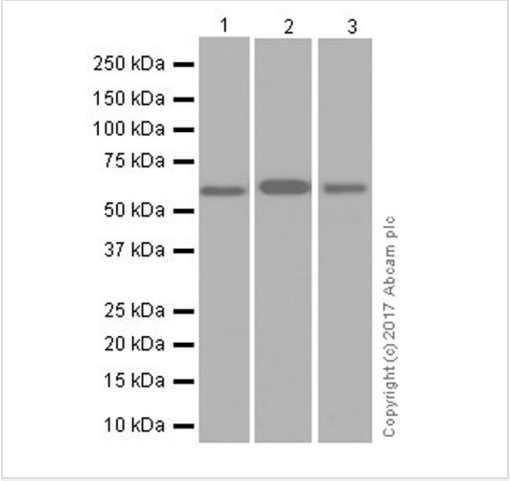
Immunohistochemical analysis of paraffin-embedded rat spleen tissue labeling HDAC2 with ab219053 at 1/4000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

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)

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

Lane 1 : Human fetal brain lysate
Lane 2 : Human fetal heart lysate
Lane 3 : Human fetal kidney lysate

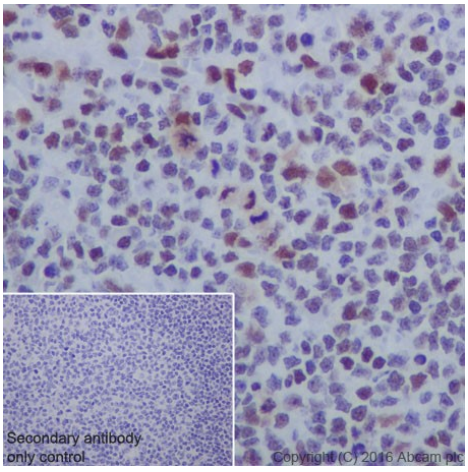
Lysates/proteins at 10 µg per lane.

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

Predicted band size: 55 kDa
Observed band size: 55 kDa

Blocking/Dilution buffer: 5% NFDM/TBST.

Exposure time: Lane 1: 3 minutes; Lane 2: 15 seconds; Lane 3: 2 seconds.



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

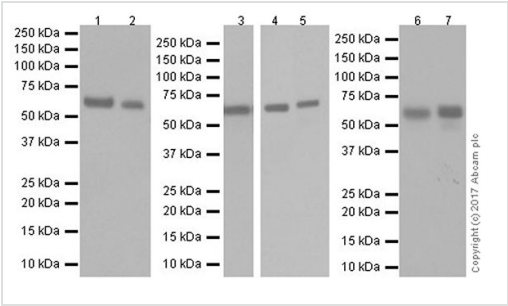
Immunohistochemical analysis of paraffin-embedded human tonsil tissue labeling HDAC2 with ab219053 at 1/4000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

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.



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

Lanes 1-5 : Anti-HDAC2 antibody [EPR20117] (ab219053) at 1/1000 dilution
Lanes 6-7 : Anti-HDAC2 antibody [EPR20117] (ab219053) at 1/5000 dilution

Lane 1 : Mouse brain lysate
Lane 2 : Mouse heart lysate
Lane 3 : Rat heart lysate
Lane 4 : Rat brain lysate
Lane 5 : Rat spleen lysate
Lane 6 : PC-12 (Rat adrenal gland pheochromocytoma cell line) whole cell lysate
Lane 7 : NIH/3T3 (Mouse embryonic fibroblast cell line) whole cell lysate

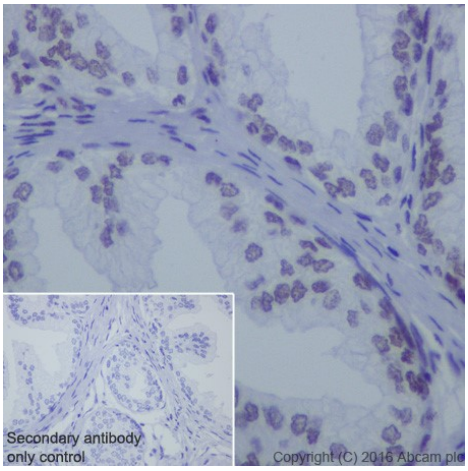
Lysates/proteins at 10 µg per lane.

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

Predicted band size: 55 kDa
Observed band size: 55 kDa

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.



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

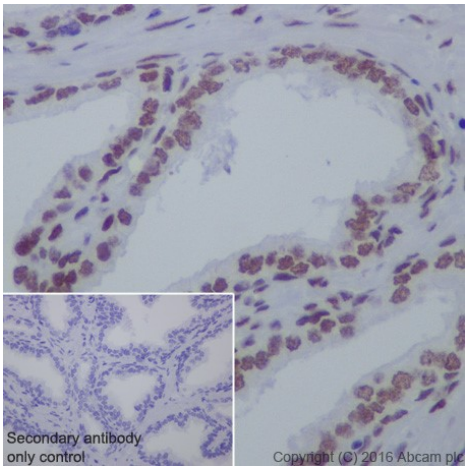
Immunohistochemical analysis of paraffin-embedded human prostate hyperplasia tissue labeling HDAC2 with ab219053 at 1/4000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

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)

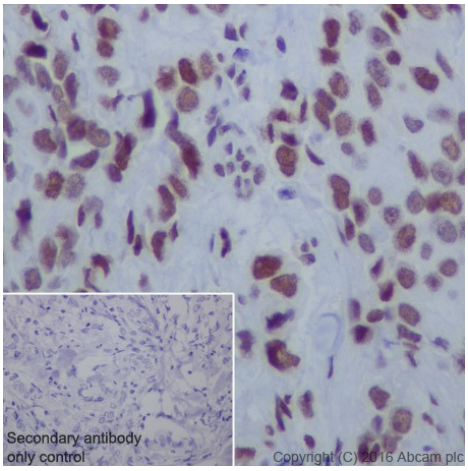
Immunohistochemical analysis of paraffin-embedded human prostate cancer tissue labeling HDAC2 with ab219053 at 1/4000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

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.



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

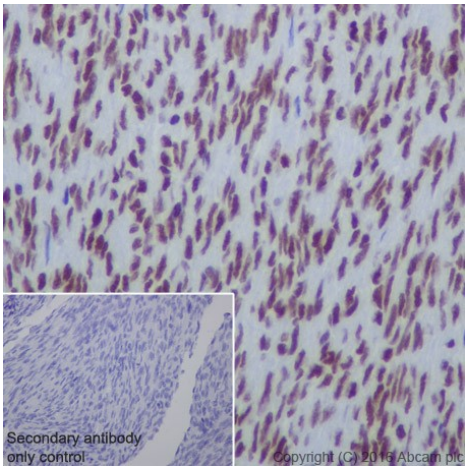
Immunohistochemical analysis of paraffin-embedded human breast cancer tissue labeling HDAC2 with ab219053 at 1/4000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

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)

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.

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