abcam

Product datasheet

# Anti-HDAC2 antibody [EPR20117] - BSA and Azide free ab251561

KO VALIDATED Recombinant RabMAb

5 Images

## Overview

| | |
|---|---|
| **Product name** | Anti-HDAC2 antibody [EPR20117] - BSA and Azide free |
| **Description** | Rabbit monoclonal [EPR20117] to HDAC2 - BSA and Azide free |
| **Host species** | Rabbit |
| **Tested applications** | **Suitable for:** Flow Cyt (Intra), IP, ICC/IF, IHC-P, ChIC/CUT&RUN-seq, WB |
| **Species reactivity** | **Reacts with:** Mouse, Rat, Human |
| **Immunogen** | Recombinant fragment. This information is proprietary to Abcam and/or its suppliers. |
| **Positive control** | WB: His-tagged human HDAC2 recombinant protein (aa339-488);HeLa,SH-SY5Y,HEK-293,PC-12,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 (intra): NIH/3T3 cells IP: HeLa cell lysate ChIC/CUT&RUN-Seq: K-562 cells |
| **General notes** | ab251561 is the carrier-free version of **ab219053**.<br><br>Our **carrier-free** antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. The carrier-free buffer and high concentration allow for increased conjugation efficiency.<br><br>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.<br><br>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.<br><br>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.<br><br>This product is a recombinant monoclonal antibody, which offers several advantages including:<br>- High batch-to-batch consistency and reproducibility<br>- Improved sensitivity and specificity<br>- Long-term security of supply<br>- 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

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| **Form** | Liquid |
| **Storage instructions** | Shipped at 4°C. Store at +4°C. Do Not Freeze. |
| **Storage buffer** | pH: 7.2<br>Constituent: PBS |
| **Carrier free** | Yes |
| **Purity** | Protein A purified |
| **Clonality** | Monoclonal |
| **Clone number** | EPR20117 |
| **Isotype** | IgG |

## Applications

**The Abpromise guarantee** Our **Abpromise guarantee** covers the use of ab251561 in the following tested applications.

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

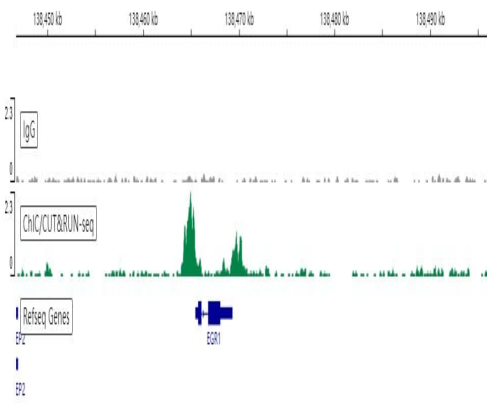
| Application | Abreviews | Notes |
|---|---|---|
| **Flow Cyt (Intra)** | | Use at an assay dependent concentration. |
| **IP** | | Use at an assay dependent concentration. |
| **ICC/IF** | | Use at an assay dependent concentration. |
| **IHC-P** | | Use at an assay dependent concentration. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol. |
| **ChIC/CUT&RUN-seq** | | Use at an assay dependent concentration. |
| **WB** | | Use at an assay dependent concentration. 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



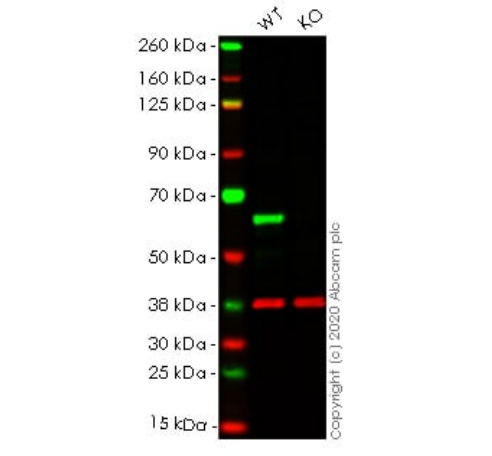

ChIC/CUT&RUN sequencing - Anti-HDAC2 antibody [EPR20117] - BSA and Azide free (ab251561)

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 downloaded **here**.

The University of Geneva owns patents relevant to ChIC (Chromatin Immuno-Cleavage) methods.

This data was developed using the same antibody clone in a different buffer formulation (**ab219053**).




Western blot - Anti-HDAC2 antibody [EPR20117] - BSA and Azide free (ab251561)

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

**Lane 1 :** Wild-type HEK-293T cell lysate
**Lane 2 :** HDAC2 knockout HEK-293T cell lysate

Lysates/proteins at 20 µg per lane.

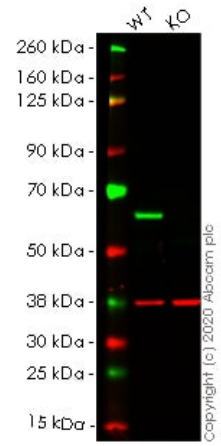
Performed under reducing conditions.

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

This data was developed using the same antibody clone in a different buffer formulation (**ab219053**).

**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.

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**Lane 2 :** HDAC2 knockout HEK-293T cell lysate

Lysates/proteins at 20 µg per lane.

Performed under reducing conditions.

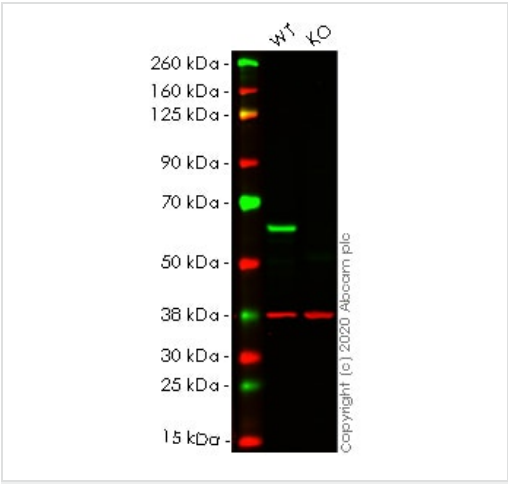
**Predicted band size:** 55 kDa
**Observed band size:** 60 kDa

This data was developed using the same antibody clone in a different buffer formulation (**ab219053**).

**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.

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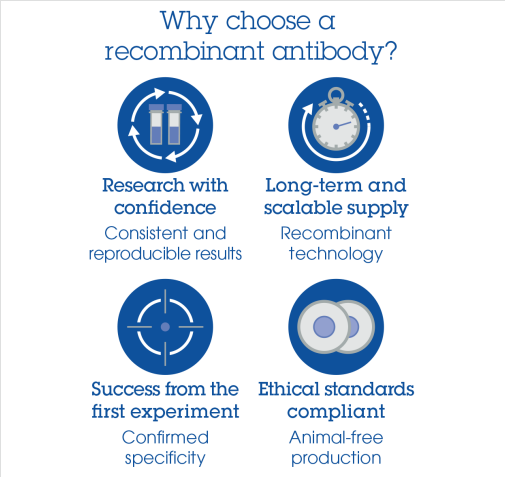
**ab219053** Anti-HDAC2 antibody [EPR20117] was shown to specifically react with HDAC2 in wild-type HEK-293T cells. Loss of signal was observed when knockout cell line **ab266588** (knockout cell lysate **ab256937**) was used. Wild-type and HDAC2 knockout samples were subjected to SDS-PAGE. **ab219053** 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.




Anti-HDAC2 antibody [EPR20117] - BSA and Azide free (ab251561)

**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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