abcam

Product datasheet

Anti-HDAC1 antibody ab53091

6 Abreviews 2 References 8 Images

Overview

Product name	Anti-HDAC1 antibody
Description	Rabbit polyclonal to HDAC1
Specificity	ab53091 detects endogenous levels of total HDAC1 protein.
Tested applications	**Suitable for:** Flow Cyt, ICC, WB, IHC-P, ELISA, ICC/IF
Species reactivity	**Reacts with:** Mouse, Rat, Human
Immunogen	Synthetic peptide derived from human HDAC1
Positive control	WB: NIH/3T3 cell extracts IHC-P: Human lung carcinoma tissue

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at -20°C. Stable for 12 months at -20°C.
Storage buffer	Preservative: 0.02% Sodium Azide Constituents: 50% Glycerol, PBS, 150mM Sodium chloride, pH 7.4
Purity	Immunogen affinity purified
Purification notes	ab53091 was affinity purified from rabbit antiserum by affinity chromatography using epitope specific immunogen.
Clonality	Polyclonal
Isotype	IgG

Applications

Our Abpromise guarantee covers the use of **ab53091** in the following tested applications.

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

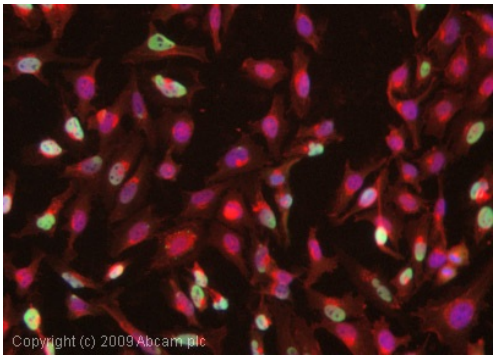
Application	Abreviews	Notes
Flow Cyt	★★★★☆	Use at an assay dependent concentration. ab171870-Rabbit polyclonal IgG, is suitable for use as an isotype control with this antibody.
ICC	★★★★★	Use at an assay dependent concentration.
WB	★★★★★	1/300 - 1/1000. Detects a band of approximately 60 kDa (predicted molecular weight: 55 kDa).

IHC-P		Use at an assay dependent concentration.
ELISA		1/10000.
ICC/IF	★★★★★	Use a concentration of 1 µg/ml.

Target

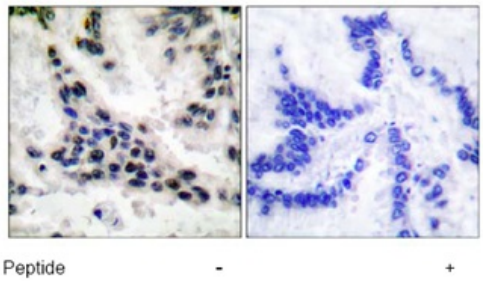
Function	Responsible for the deacetylation of lysine residues on the N-terminal part of the core histones (H2A, H2B, H3 and H4). Histone deacetylation gives a tag for epigenetic repression and plays an important role in transcriptional regulation, cell cycle progression and developmental events. Histone deacetylases act via the formation of large multiprotein complexes. Deacetylates SP proteins, SP1 and SP3, and regulates their function. Component of the BRG1-RB1-HDAC1 complex, which negatively regulates the CREST-mediated transcription in resting neurons. Upon calcium stimulation, HDAC1 is released from the complex and CREBBP is recruited, which facilitates transcriptional activation. Deacetylates TSHZ3 and regulates its transcriptional repressor activity. Deacetylates 'Lys-310' in RELA and thereby inhibits the transcriptional activity of NF-kappa-B.
Tissue specificity	Ubiquitous, with higher levels in heart, pancreas and testis, and lower levels in kidney and brain.
Sequence similarities	Belongs to the histone deacetylase family. HD type 1 subfamily.
Post-translational modifications	Sumoylated on Lys-444 and Lys-476; which promotes enzymatic activity. Desumoylated by SENP1. Phosphorylation on Ser-421 and Ser-423 promotes enzymatic activity and interactions with NuRD and SIN3 complexes. Ubiquitinated by CHFR, leading to its degradation by the proteasome.
Cellular localization	Nucleus.

Anti-HDAC1 antibody images



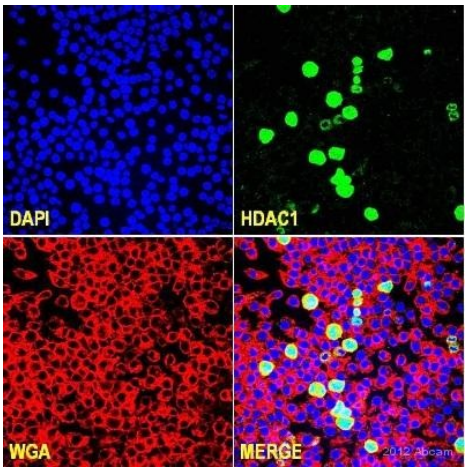
Immunocytochemistry/ Immunofluorescence-HDAC1 antibody(ab53091)

ICC/IF image of ab53091 stained HeLa cells. The cells were 4% PFA fixed (10 min) and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab53091, 1µg/ml) overnight at +4°C. The secondary antibody (green) was Alexa Fluor® 488 goat anti-rabbit IgG (H+L) used at a 1/1000 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.



Immunohistochemistry (Paraffin-embedded sections) - HDAC1 antibody (ab53091)

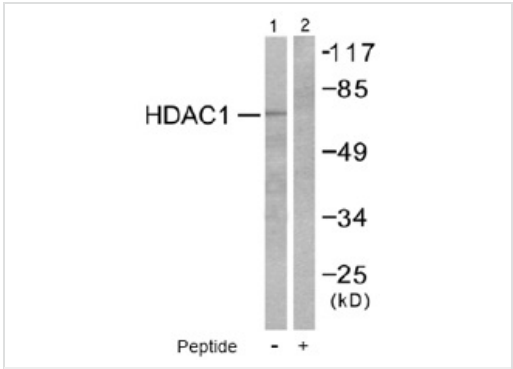
Immunohistochemical analysis of paraffin-embedded human lung carcinoma tissue using ab53091 at 1/50 dilution, in the presence (right) or absence (left) of blocking peptide.



Immunocytochemistry/ Immunofluorescence - Anti-HDAC1 antibody (ab53091)

This image is courtesy of an abreview submitted by Dr Mahesh Shivananjappa.

Immunocytochemistry/ Immunofluorescence analysis of mouse RAW 264.7 cells labeling HDAC1 with ab53091 at 1/150 dilution. The cells were fixed with paraformaldehyde and permeabilized with 0.1% Triton-X100 in 2% BSA for 15min. Blocking of the cells was done with 2% BSA for 1 hour at 4°C, followed by staining with ab53091 at 1/150 in 2% BSA in PBS for 16 hours at 4°C. An Alexa Fluor® 488 conjugated chicken anti-rabbit IgG (H+L) secondary antibody was used at 1/1000 dilution.

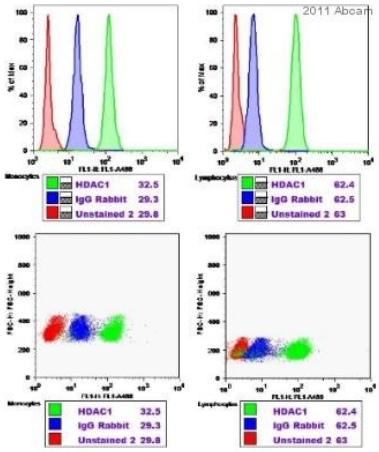


Western blot - HDAC1 antibody (ab53091)

All lanes : Anti-HDAC1 antibody (ab53091) at 1/300 dilution

Lane 1 : NIH/3T3 cell extracts
Lane 2 : NIH/3T3 cell extracts with blocking peptide

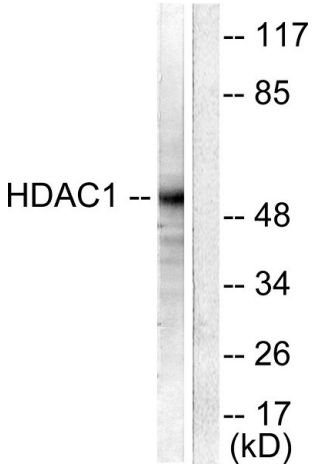
Predicted band size : 55 kDa
Observed band size : 60 kDa



Flow Cytometry - Anti-HDAC1 antibody (ab53091)

This image is courtesy of an abreview submitted by Dr. Mahesh Shivananjappa.

Flow Cytometry analysis of human mononuclear cell preparations labeling HDAC1 with ab53091 at 1/100 dilution (green). Cells were harvested using a apheresis preparation method. Cells were then fixed with paraformaldehyde and permeabilized with 0.1% Triton-X100 in 2% BSA for 15 min. An Alexa Fluor® 488 conjugated chicken anti-rabbit IgG (H+L) was used as the secondary antibody at 1/500 dilution. Blue - secondary only, red - unstained cells.

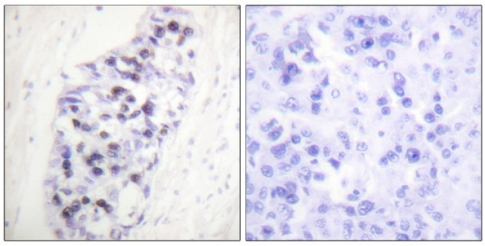


Western blot - Anti-HDAC1 antibody (ab53091)

All lanes : Anti-HDAC1 antibody (ab53091)

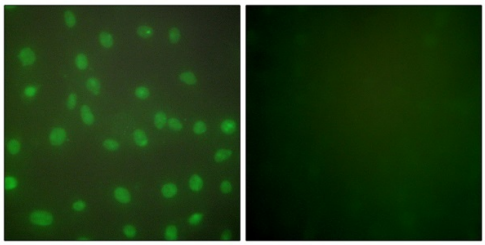
Lane 1 : NIH/3T3 cell lysates
Lane 2 : NIH/3T3 cell lysates blocked with synthesized peptide

Predicted band size : 55 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HDAC1 antibody (ab53091)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human lung carcinoma tissue labeling HDAC1 with ab53091. The image on the right is blocked with the synthesized peptide.



Immunocytochemistry/ Immunofluorescence - Anti-HDAC1 antibody (ab53091)

Immunocytochemistry/ Immunofluorescence analysis of NIH/3T3 cells labeling HDAC1 with ab53091. The image on the right is blocked with the synthesized peptide.

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