diagenode
A Hologic Company

TECHNICAL DATASHEET

HDAC1 monoclonal antibody

Other names: HD1, RPD3, RPD3L1, GON-10

Cat. No. C15200144
Type: Monoclonal **ChIP-grade**
Isotype: IgG1
Source: Mouse
Lot #: 001
Size: 50 µg/ 25 µl
Concentration: 2 µg/µl

Specificity: Human: positive. Other species: not tested.
Purity: Protein A purified monoclonal antibody in PBS containing 0.05% azide and 0.05% ProClin 300.
Storage: Store at -20°C; for long storage, store at -80°C. Avoid multiple freeze-thaw cycles.
Precautions: This product is for research use only. Not for use in diagnostic or therapeutic procedures.

Description: Monoclonal antibody raised in mouse against human HDAC1 (Histone deacetylase 1), using a KLH-conjugated synthetic peptide containing a sequence from the C-terminal region of the protein.

Applications

	Suggested dilution	Results
ChIP *	2 µg/ChIP	Fig 1
Western blotting	1:2,000	Fig 2, 3
Immunofluorescence	1:500	Fig 4

* Please note that the optimal antibody amount per IP should be determined by the end-user. We recommend testing 1-5 µg per IP.

Target description

HDAC1 (UniProt/Swiss-Prot entry Q13547) catalyses the deacetylation of lysine residues on the N-terminal part of the core histones (H2A, H2B, H3 and H4). Acetylation and deacetylation of these highly conserved lysine residues is important for the control of gene expression and HDAC activity is associated with gene repression. Histone deacetylation is established by the formation of large multiprotein complexes. HDAC1 also interacts with the retinoblastoma tumor suppressor protein and is able to deacetylate p53. Therefore, it plays an essential role in cell proliferation and differentiation and in apoptosis.

Results

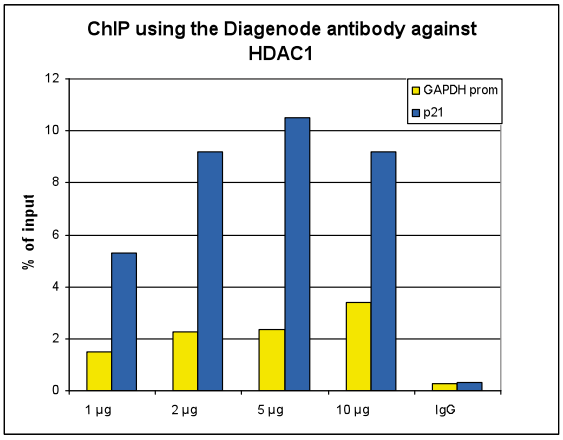

Figure 1. ChIP results obtained with the Diagenode monoclonal antibody directed against HDAC1

ChIP assays were performed using human HeLa cells, the Diagenode monoclonal antibody against HDAC1 (Cat. No. C15200144) and optimized PCR primer sets for qPCR. ChIP was performed with the "LowCell# ChIP" kit (Cat. No. C01010073) on sheared chromatin from 10,000 cells using the SX-8G IP-Star automated system. A titration of the antibody consisting of 1, 2, 5, and 10 µg per ChIP experiment was analysed. IgG (5 µg/IP) was used as negative IP control. QPCR was performed with primers for the GAPDH promoter and for the coding region of p21, a known target gene of HDAC1. Figure 1 shows the recovery, expressed as a % of input (the relative amount of immunoprecipitated DNA compared to input DNA after qPCR analysis).

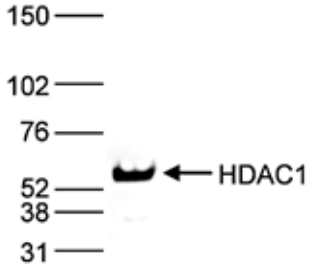

Figure 2. Western blot analysis using the Diagenode monoclonal antibody directed against HDAC1

Nuclear extracts from HeLa cells (40 µg) were analysed by Western blot using the Diagenode monoclonal antibody against HDAC1 (Cat. No. C15200144) diluted 1:2,000 in TBS-Tween containing 5% skimmed milk. The position of the protein of interest is indicated on the right (expected size: 55 kDa); the marker (in kDa) is shown on the left.

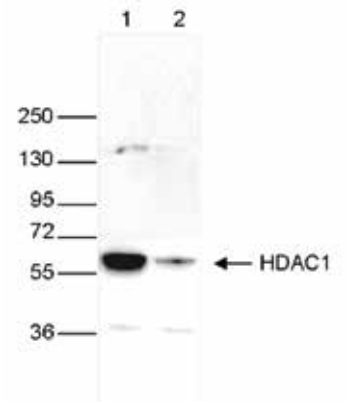

Figure 3. Western blot analysis using the Diagenode monoclonal antibody directed against HDAC1

Whole cell extracts (40 µg) from HeLa cells transfected with HDAC1 siRNA (lane 2) and from an untransfected control (lane 1) were analysed by Western blot using the Diagenode antibody against HDAC1 (Cat. No. C15200144) diluted 1:1,000 in TBS-Tween containing 5% skimmed milk. The position of the protein of interest is indicated on the right (expected size: 55 kDa); the marker (in kDa) is shown on the left.

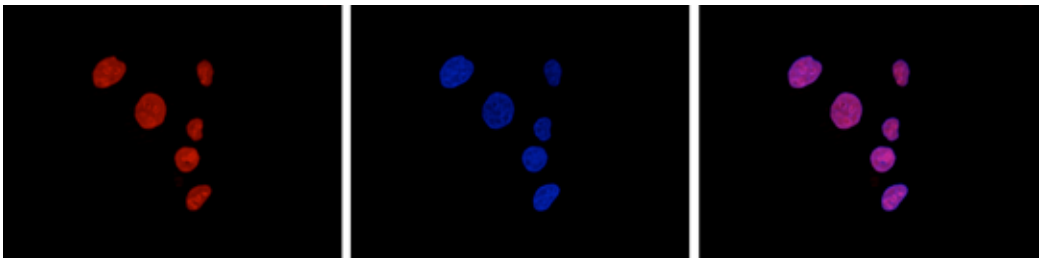

Figure 4. Immunofluorescence using the Diagenode monoclonal antibody directed against HDAC1

HeLa cells were stained with the Diagenode antibody against HDAC1 (Cat. No. C15200144) and with DAPI. Cells were fixed with 4% formaldehyde for 10' and blocked with PBS/TX-100 containing 5% normal goat serum and 1% BSA. The cells were immunofluorescently labelled with the HDAC1 antibody (left) diluted 1:500 in blocking solution followed by an anti-mouse antibody conjugated to Alexa594. The middle panel shows staining of the nuclei with DAPI. A merge of the two stainings is shown on the right.

Diagenode sa. BELGIUM | **EUROPE**
LIEGE SCIENCE PARK
Rue Bois Saint-Jean, 3
4102 Seraing (Ougrée) - Belgium
Tel: +32 4 364 20 50
Fax: +32 4 364 20 51
orders@diagenode.com
info@diagenode.com

Diagenode Inc. USA | **NORTH AMERICA**
400 Morris Avenue, Suite 101
Denville, NJ 07834 - USA
Tel: +1 862 209-4680
Fax: +1 862 209-4681
orders.na@diagenode.com
info.na@diagenode.com

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