

APC206Hu01 100µg
Active Active Histone Deacetylase 1 (HDAC1)
Organism Species: *Homo sapiens* (Human)
Instruction manual

FOR RESEARCH USE ONLY
NOT FOR USE IN CLINICAL DIAGNOSTIC PROCEDURES

1th Edition (Apr, 2016)

[PROPERTIES]

Source: Prokaryotic expression.

Host: *E. coli*

Residues: Met1~Ala482

Tags: N-terminal His-tag

Purity: >95%

Buffer Formulation: 20mM Tris, 150mM NaCl, pH8.0, containing 0.05% sarcosyl and 5% trehalose.

Applications: Cell culture; Activity Assays.

(May be suitable for use in other assays to be determined by the end user.)

Predicted isoelectric point: 5.3

Predicted Molecular Mass: 58.8kDa

Accurate Molecular Mass: 70kDa as determined by SDS-PAGE reducing conditions.

Phenomenon explanation:

The possible reasons that the actual band size differs from the predicted are as follows:

1. Splice variants: Alternative splicing may create different sized proteins from the same gene.
2. Relative charge: The composition of amino acids may affects the charge of the protein.
3. Post-translational modification: Phosphorylation, glycosylation, methylation etc.
4. Post-translation cleavage: Many proteins are synthesized as pro-proteins, and then cleaved to give the active form.
5. Polymerization of the target protein: Dimerization, multimerization etc.

[USAGE]

Reconstitute in 20mM Tris, 150mM NaCl (pH8.0) to a concentration of 0.1-1.0 mg/mL. Do not vortex.

[STORAGE AND STABILITY]

Storage: Avoid repeated freeze/thaw cycles.

Store at 2-8°C for one month.

Aliquot and store at -80°C for 12 months.

Stability Test: The thermal stability is described by the loss rate. The loss rate was determined by accelerated thermal degradation test, that is, incubate the protein at 37°C for 48h, and no obvious degradation and precipitation were observed. The loss rate is less than 5% within the expiration date under appropriate storage condition.

[SEQUENCE]

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MAQTQGTRRK VCYYYDGDVG NYYYGQGHPM KPHRIRMTHN LLLNYGLYRK  
MEIYRPHKAN AEEMTKYHSD DYIKFLRSIR PDNMSEYSKQ MQRFNVGEDC  
PVFDGLFEFC QLSTGGSVAS AVKLNKQQTD IAVNWAGGLH HAKKSEASGF  
CYVNDIVLAI LELLKYHQRV LYIDIDIHHG DGVEEAFYTT DRVMTVSFHK  
YGEYFPGTGD LRDIGAGK GK YAVNYPLRD GIDDESYEAI FKPVMSKVME  
MFQPSAVVLQ CGSDSLSGDR LGCFNLTIKG HAKCVEFVKS FNLPLMLGG  
GGYTIRNVAR CWTYETAVAL DTEIPNELPY NDYFEYFGPD FKLHISPSNM  
TNQNTNEYLE KIKQRLFENL RMLPHAPGVQ MQAIPEDAIP EESGDEDEDD  
PDKRISICSS DKRIACEEEF SDSEEEGEGG RKNSSNFKKA KRVKTEDEKE  
KDPEEKKEVT EEEKTKKEKP EAKGVKEEVK LA
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[ACTIVITY]

Histone deacetylase 1 (HDAC1) is an enzyme which belongs to the histone deacetylase/acuc/apha family and is a component of the histone deacetylase complex. Histone acetylation and deacetylation, catalyzed by multisubunit complexes, play a key role in the regulation of eukaryotic gene expression.

HDAC1 also interacts with retinoblastoma tumor-suppressor protein and this complex is a key element in the control of cell proliferation and differentiation. Besides, Specificity Protein 1 (Sp1) has been identified as an interactor of HDAC1, thus a binding ELISA assay was conducted to detect the interaction of recombinant human HDAC1 and recombinant human Sp1. Briefly, HDAC1 were diluted serially in PBS, with 0.01% BSA (pH 7.4). Duplicate samples of 100uL were then transferred to Sp1-coated microtiter wells and incubated for 2h at 37°C. Wells were washed with PBST and incubated for 1h with anti-HDAC1 pAb, then aspirated and washed 3 times. After incubation with HRP labelled secondary antibody, wells were aspirated and washed 3 times. With the addition of substrate solution, wells were incubated 15-25 minutes at 37 °C. Finally, add 50µL stop solution to the wells and read at 450nm immediately. The binding activity of HDAC1 and Sp1 was shown in Figure 1, and this effect was in a dose dependent manner.

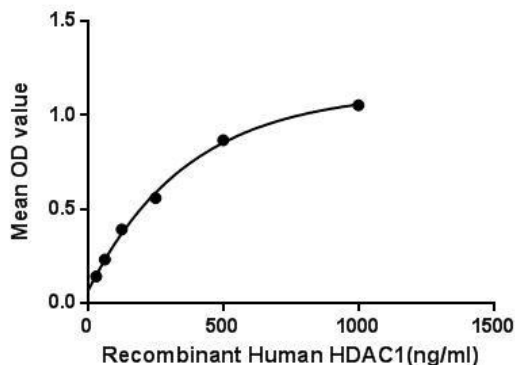


Figure 1. The binding activity of HDAC1 with Sp1.

[IDENTIFICATION]

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21TGGGCGAGCGGGGCGCGGGGAGGAAAGTCTGTACTACTACGAGGGAGATGTTGGAAATTCATATATGACGAGGGCGGCGAATGAGGCTCAGCGAATCCGATGACTCATAAATTCCTCTCACTATGCTCTCTACCGAAGATGGAAATCTATGGCTCTCAGAGGCGAATGCTGAGGAGATCGAAGCTCAGAGGGA  
N A Q T Q G S T R R K V C Y Y D G D V G N V Y Y G Q G H P M K P H R T R M T H L L L N Y G L Y R X H E I Y R P H K A N A E E N T K Y H S D
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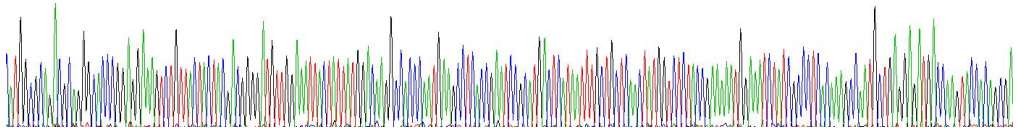


Figure 2. Gene Sequencing (extract)

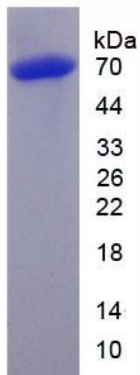


Figure 3. SDS-PAGE

Sample: Active recombinant HDAC1, Human

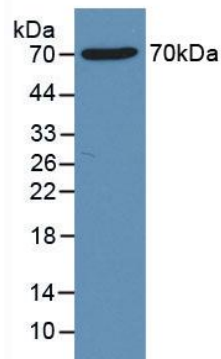


Figure 4. Western Blot

Sample: Recombinant HDAC1, Human;

Antibody: Rabbit Anti-Human HDAC1 Ab (PAC206Hu01)



[IMPORTANT NOTE]

The kit is designed for in vitro and research use only, we will not be responsible for any issue if the kit was used in clinical diagnostic or any other procedures.