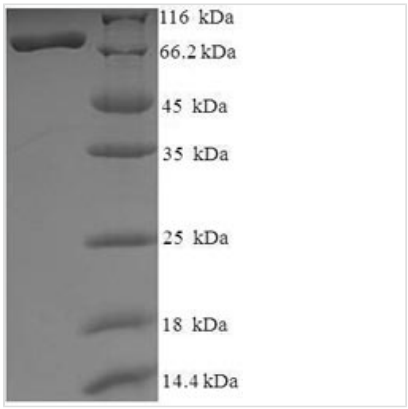
Recombinant Human Histone deacetylase 1 (HDAC1)

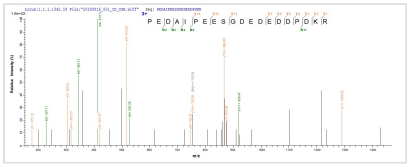
Product Code	CSB-EP010235HU
Relevance	Responsible for the deacetylation of lysine residues on the N-terminal part of the core histones (H2A, H2B, H3 and H4). Histone deacetylation gives a tag for epigenetic repression and plays an important role in transcriptional regulation, cell cycle progression and 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. Deacetylates NR1D2 and abrogates the effect of KAT5-mediated relieving of NR1D2 transcription repression activity. Component of a RCOR/GFI/KDM1A/HDAC complex that suppresses, via histone deacetylase (HDAC) recruitment, a number of genes implicated in multilineage blood cell development. Involved in CIART-mediated transcriptional repression of the circadian transcriptional activator: CLOCK-ARNTL/BMAL1 heterodimer. Required for the transcriptional repression of circadian target genes, such as PER1, mediated by the large PER complex or CRY1 through histone deacetylation
Abbreviation	Recombinant Human HDAC1 protein
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	Q13547
Product Type	Recombinant Proteins
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	MAQTQGTRRKVCYYYDGDVGNYYYGQGHPMKPHRIRMTHNLLLNYGLYRKM EIYRPHKANAEEMTKYHSDDYIKFLRSIRPDNMSEYSKQMQRFNVGEDCPVFD GLFEFCQLSTGGSVASAVKLNKQQTDIAVNWAGGLHHAKKSEASGFCYVNDI VLAILELLKYHQRVLYIDIDIHHGDGVEEAFYTTDRVMTVSFHKYGEYFPGTGDL RDIGAGKGKYYAVNYPLRDGIDDESYEAIFKPVMSKVMEMFQPSAVVLQCGS DSLSGDRLGCFNLTIKGHAKCVEFVKSFNLPMLMLGGGGYTIRNVARCWTYET AVALDTEIPNELPYNDYFEYFGPDFKLHISPSNMTNQNTNEYLEKIKQRLFENL RMLPHAPGVQMQAIPEDAIPEESGDEDEDDPDKRISICSSDKRIACEEEFSDSE EEGEGGRKNSSNFKKAKRVKTEDEKEKDPEEKKEVTEEEKTKEEKPEAKGVK EEVKLA

Research Area	Immunology
Source	E.coli
Target Names	HDAC1
Expression Region	1-482aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-SUMO-tagged
Mol. Weight	73.2 kDa
Protein Length	Full Length

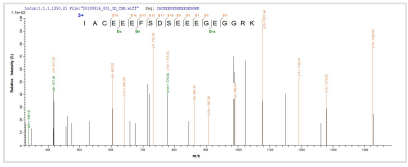
Image



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.



Based on the SEQUEST from database of E.coli host and target protein, the LC-MS/MS Analysis result of CSB-EP010235HU could indicate that this peptide derived from E.coli-expressed Homo sapiens (Human) HDAC1.



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Description

In the production of recombinant Human HDAC1 protein, the gene for HDAC1 (E.coli) was cloned into a vector and expressed as HDAC1 protein in E.coli. The plasmids with the copy of HDAC1, or the expression vector, were often used to enhance gene expression. Every step of production was undergone with a strict QC system. N-terminal 6xHis-SUMO tag was used in the process. The purity is 90% determined by SDS-PAGE.

HDAC1 belongs to the class IV family. HDAC1 is found in at least three evolutionally conserved, distinct protein complexes: the Sin3, the CoREST and the Mi-2/NuRD complexes. HDAC1 activity is modulated through various post translational modifications including phosphorylation, acetylation, ubiquitination, sumoylation, and nitrosylation. HDAC1 is phosphorylated at serine 421 and 423

by casein kinase II and dephosphorylated by mitogen-activated protein kinase phosphatase-3 (MKP-3). Mutagenesis analysis suggested that phosphorylation on these sites are important for histone deacetylase activity and for HDAC1 to interact with corepressor complexes. HDAC1 phosphorylation increases during the G1 phase and was significantly reduced during the late S/G2 phase. Clinically, it has been shown HDACi can reactivate fetal globin in adult erythroid cells, suggesting the role of HDAC1 in modulating key transcription factors for erythropoiesis and its clinical relevance.

Shelf Life

The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself.
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