

HDAC3 Protein, Human, Recombinant (His & SUMO)

General Information

Synonyms:	SMAP45;HDAC3;HD3;Histone deacetylase 3;Protein deacylase HDAC3;Protein deacetylase HDAC3;RPD3-2
Protein Construction:	1-428 aa
Species:	Human
Expression Host:	E. coli
Accession:	O15379
Molecular Weight:	64.8 kDa (predicted)
AA Sequence:	MAKTVAIFYDPDVGNFHYGAGHPMKPHRLALTHSLVLHYGLYKKMIVFKPYQASQHDMCRFHSEYIDFLQ RVSPNTMQGFTKSLNAFNVGDDCPVFPGLFEFCSTRYTGASLQATQLNNKICDIANWAGGLHHAKKFEASG FCYVNDIVIGILELLKYHPRVLYIDIDIHHGDGVQEAFLYLTDRVMTVVSFHKYGNYPFGTGDMYEVGAESGRYY CLNVPLRDGIDDQSYKHLFPVINQVDFYQPTCIVLQCGADSLGCDRLGCFNLSIRGHGECVEYVKSFNIPLL VLGGGGYTVRNVARCWTYETSLLVEEAISEELPYSEYFEYFAPDFTLHPDVSTRIENQNSRQYLDQIRQTIFENL KMLNHAPSVQIHDVPADLLTYDRTDEADAERGPEENYSRPEAPNEFYDGDHDNDKESDVEI

QC Testing

Biological Activity:	Activity has not been tested. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 90% as determined by SDS-PAGE.
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Tris-based buffer, 50% glycerol

Preparation and Storage

Reconstitution:

Reconstitute the lyophilized protein in distilled water. The product concentration should not be less than 100 μg/ml. Before opening, centrifuge the tube to collect powder at the bottom. After adding the reconstitution buffer, avoid vortexing or pipetting for mixing.

Stability & Storage:

Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Responsible for the deacetylation of lysine residues on the N-terminal part of the core histones (H2A, H2B, H3 and H4), and some other non-histone substrates. 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. Participates in the BCL6 transcriptional repressor activity by deacetylating the H3 'Lys-27' (H3K27) on enhancer elements, antagonizing EP300 acetyltransferase activity and repressing proximal gene expression. Probably participates in the regulation of transcription through its binding to the zinc-finger transcription factor YY1; increases YY1 repression activity. Required to repress transcription of the POU1F1 transcription factor. Acts as a molecular chaperone for shuttling phosphorylated NR2C1 to PML bodies for sumoylation. Contributes, together with XBP1 isoform 1, to the activation of NFE2L2-mediated HMOX1 transcription factor gene expression in a PI(3)K/mTORC2/Akt-dependent signaling pathway leading to endothelial cell (EC) survival under disturbed flow/oxidative stress. Regulates both the transcriptional activation and repression phases of the circadian clock in a deacetylase activity-independent manner. During the activation phase, promotes the accumulation of ubiquitinated ARNTL/BMAL1 at the E-boxes and during the repression phase, blocks FBXL3-mediated CRY1/2 ubiquitination and promotes the interaction of CRY1 and ARNTL/BMAL1. The NCOR1-HDAC3 complex regulates the circadian expression of the core clock gene ARNTL/BMAL1 and the genes involved in lipid metabolism in the liver. Serves as a corepressor of RARA, causing its deacetylation and inhibition of RARE DNA element binding. In association with RARA, plays a role in the repression of microRNA-10a and thereby in the inflammatory response. Interacts with SETD5.

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