

# Product Information



## HDAC5 (human recombinant)

Item No. 10009379 • Lot No. XXXX

<b>Synonym:</b>	Histone Deacetylase 5
<b>Source:</b>	Human recombinant protein consisting of amino acids 657-1123 with a C-terminal His-tag expressed in Sf9 cells
<b>M<sub>r</sub>:</b>	~51 kDa
<b>Purity:</b>	≥90% by SDS-PAGE
<b>Stability:</b>	≥6 months at -80°C
<b>Supplied in:</b>	XX µg in XX mM Tris-HCl, pH 8.0, containing XXX mM sodium chloride, XX Phosphate 20, and XX glycerol
<b>Specific Activity:</b>	XX U/ug; one U=1 pmol/min of acetate released under the following condition: 25 mM Tris/HCl, pH 8.0, 137 mM sodium chloride, 2.7 mM potassium chloride, 1 mM magnesium chloride, and 0.1 mg/ml BSA, XX µM acetylated histone peptide (Item No. 10006393), and HDAC5. Incubation condition: 30 min. at 30°C.
<b>Applications:</b>	Enzyme kinetics, inhibitor screening, and selectivity profiling

### Laboratory Procedures

Histone deacetylases (HDACs) catalyze the deacetylation of core histones, resulting in tightening of nucleosomal integrity, restriction of the access of transcription factors, and suppression of transcription. HDACs also play an important role in mediating nuclear receptor functions by forming co-repressor complexes with nuclear receptors in the absence of ligands. They are also involved in mediating other transcription regulatory pathways by associating with transcription factors, such as E2F, TFIIE, TFIIIF, NF-κB, p300, Stat3, p53, and the retinoblastoma (Rb) protein.<sup>1</sup>

HDAC5 is a Class IIa HDAC which is homologous to yeast Hda 1 and is larger in size than the other two classes of HDACs.<sup>1,2</sup> Class IIa HDACs contain a highly conserved C-terminal deacetylase catalytic domain (~420 amino acids) and an N-terminal domain with no similarity to HDACs in other classes. Class IIa HDACs can shuttle between the nucleus and cytoplasm, suggesting potential extranuclear functions by regulating the acetylation status of non-histone substrates. By modifying chromatin structure and other non-histone proteins, HDACs play important roles in controlling complex biological events, including cell development, differentiation, programmed cell death, angiogenesis, and inflammation. Considering these major roles, it is conceivable that dysregulation of HDACs and subsequent imbalance of acetylation and deacetylation may be involved in the pathogenesis of various diseases, including cancer and inflammatory diseases.<sup>2</sup>

### References

1. Lin, H.-Y., Chen, C.-S., Lin, S.-P., *et al.* Targeting histone deacetylase in cancer therapy. *Medicinal Research Reviews* **26**(4), 397-413 (2006).
2. Huang, L. Targeting histone deacetylases for the treatment of cancer and inflammatory diseases. *J. Cell. Physiol.* **39.1**, 611-616 (2006).

### Related Products

Trichostatin A - Item No. 89730 • HDAC Activity/Inhibitor Screening Assay Kit - Item No. 789701 • CAY10433 - Item No. 10005019 • HAT Inhibitor Screening Assay Kit - Item No. 10006515 • pCAF Histone Acetyltransferase - Item No. 10009115 • HDAC1 (human recombinant) - Item No. 10009231 • HDAC3 (human recombinant) - Item No. 10009232 • HDAC2 (human recombinant) - Item No. 10009377 • HDAC8 (human recombinant) - Item No. 10009380

**WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.**

#### MATERIAL SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Material Safety Data Sheet, which has been sent under separate cover to the MSDS supervisor at your institution.

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