FLUOR DE LYS® HDAC1 fluorometric drug discovery assay kit

A FLUOR DE LYS® fluorescent assay system. The HDAC1 Fluorescent Activity Assay/Drug Discovery Kit is a complete assay system designed to measure the lysyl deacetylase activity of the recombinant human HDAC1 included in the kit. The kit is ideal for chemical library screening for candidate inhibitors or kinetic assay of the enzyme under varying conditions. The FLUOR DE LYS® HDAC1 assay is based on the FLUOR DE LYS® Substrate and FLUOR DE LYS® Developer combination. The assay procedure has two steps. First, the FLUOR DE LYS® Substrate, which comprises an acetylated lysine side chain, is incubated with HDAC1. Deacetylation of the substrate sensitizes the substrate so that, in the second step, treatment with the FLUOR DE LYS®Developer produces a fluorophore.

Human HDAC1 (HD1) was the first protein to be linked to histone deacetylase activity. It is homologous to the yeast protein Rpd3, a relationship which has since come to define the “class I HDACs”. HDAC1 promotes transcriptional repression by deacetylating lysine ε-amino groups in histone N-terminal tails, a function frequently carried out in association with multi-protein transcription repression complexes such as NuRD, Sin3> and CoREST. Ubiquitously expressed in human tissues, HDAC1-containing complexes appear to contribute the greater part of (at least class I) deacetylase activity in HeLa nuclear extracts. Aside from its interaction with co-repressors, HDAC1 activity may be regulated by post-translation modifications such as phosphorylation and sumoylation or binding to the inhibitor maspin, a tumor-suppressive serpin homolog. Although originally described as a “histone deacetylase”, HDAC1 has been shown to catalyze the regulatory deacetylation of non-histone proteins, including p53. Overexpression of HDAC1 has been found in various cancer types. HDAC inhibitors (HDACi) have shown considerable promise as anti-cancer agents and HDACi compounds from multiple chemical classes are in stages of drug development ranging from preclinical to phase III trials. HDAC inhibitors have shown promise as anti-tumor agents and naturally this has stimulated interest in the screening of compounds for HDAC1 inhibition.

Citations: 17

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- Useful for inhibitor screening or characterizing enzyme kinetics
- Includes optimal substrate selected from a panel of acetylated sites in p53 and histones
- Supplied with enough recombinant enzyme for 96 assays (1 x 96-well plate)

Ordering Information

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BML-AK511-0001	96 wells

Manuals, SDS & CofA

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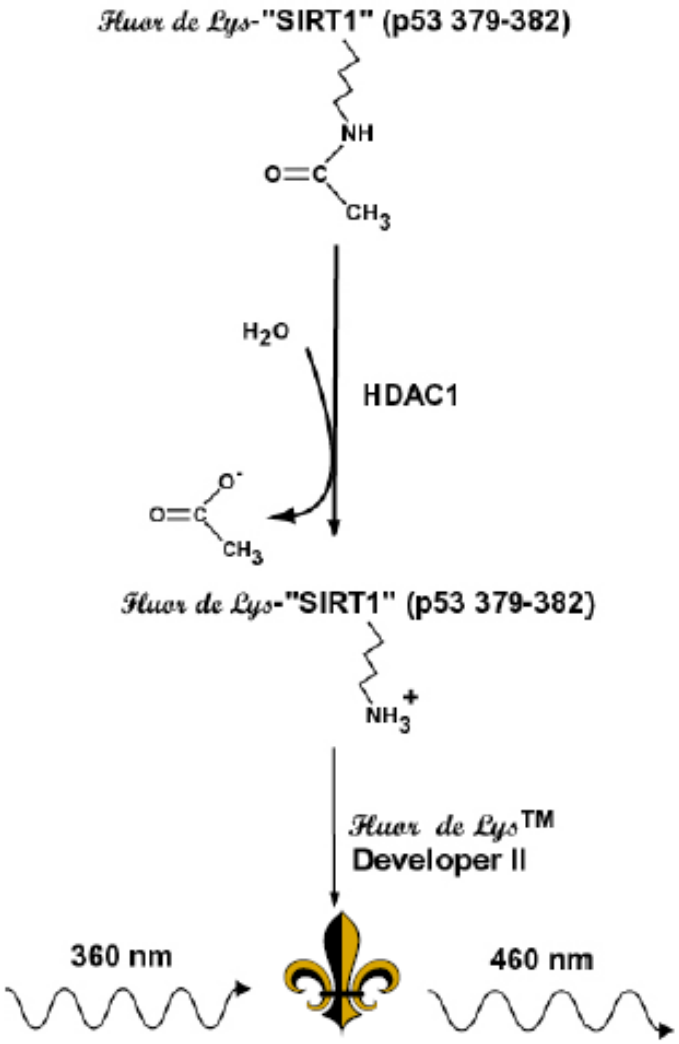

Figure: Reaction Scheme of the HDAC1 Fluorimetric Activity Assay*. Deacetylation of the substrate sensitizes it to the Developer II, which then generates a fluorophore (symbol). The fluorophore is excited with 360 nm light and the emitted light (460 nm) is detected on a fluorometric plate reader.

Handling & Storage

Use/Stability	Store all components except the microplate and instruction booklet at -80°C for the highest stability. The HDAC1 Enzyme (Prod. No. BML-SE456), must be handled with particular care in order to retain maximum enzymatic activity. Defrost it quickly in a RT water bath or by rubbing between fingers, then immediately store on an ice bath. The remaining unused enzyme should be refrozen quickly, by placing at -80°C. If possible, snap freeze in liquid nitrogen or a dry ice/ethanol bath. To minimize the number of freeze/thaw cycles, aliquot the enzyme into separate tubes and store at -80°C.
Long Term Storage	-80°C
Shipping	Dry Ice

Regulatory Status

RUO - Research Use Only

Product Details

Alternative Name	Histone deacetylase 1 fluorescent assay kit
Application	Activity assay, Cell-based assays, Fluorescent detection, HTS

Contents	**HDAC1** (Histone Deacetylase 1) (human, recombinant) (Prod. No. (BML-SE456) (50 µg; 10mM TRIS, pH 7.5, 100mM sodium chloride, 3mM magnesium chloride, 10% glycerol) Storage: -80°C, avoid freeze/thaw cycles **FLUOR DE LYS® SIRT1, Deacetylase Substrate** (Prod. No. BML-KI177) (100µl; 5mM solution in 50mM TRIS/Cl, pH 8.0, 137mM sodium chloride, 2.7mM potassium chloride, 1mM magnesium chloride) Storage: -80°C **FLUOR DE LYS® Developer II Concentrate (5x)** (Prod. No. BML-KI176) (5 x 250 µl; 5x Stock Solution; Dilute in Assay Buffer before use) Storage: -80°C **Trichostatin A** (HDAC Inhibitor) (Prod. No. BML-GR-309-9090) (100 µl; 0.2mM in DMSO) Storage: -80°C **FLUOR DE LYS® Deacetylated Standard** (Prod. No. BML-KI142) (30 µl; 10mM in DMSO) Storage: -80°C **HDAC Assay Buffer II** (50mM TRIS/Cl, pH 8.0, 137mM sodium chloride, 2.7mM potassium chloride, 1mM magnesium chloride, 1mg/ml bovine serum albumin) (Prod. No. BML-KI422) (20 ml) Storage: -20°C (or -80°C) **HDAC Assay Buffer** (50mM TRIS/Cl, pH 8.0, 137mM sodium chloride, 2.7mM potassium chloride, 1mM magnesium chloride) (Prod. No. BML-KI143) (20 ml) Storage: -20°C (or -80°C) **1/2 Volume Microplates** (Prod. No. 80-2407) 1 clear and 1 white, 96-well Storage: Ambient
UniProt ID	Q13547

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