# 9-Hydroxyoctadecanoic acid

**Cat. No.:** HY-N11692

**CAS No.:** 3384-24-5

**Molecular Formula:** $C_{18}H_{36}O_3$

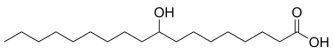
**Molecular Weight:** 300.48

**Target:** HDAC

**Pathway:** Cell Cycle/DNA Damage; Epigenetics

**Storage:**

| | | |
|---|---|---|
| Powder | -20°C | 3 years |
| | 4°C | 2 years |
| In solvent | -80°C | 6 months |
| | -20°C | 1 month |




## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : ≥ 100 mg/mL (332.80 mM)

* "≥" means soluble, but saturation unknown.

**Preparing Stock Solutions**

| Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 3.3280 mL | 16.6400 mL | 33.2801 mL |
| 5 mM | 0.6656 mL | 3.3280 mL | 6.6560 mL |
| 10 mM | 0.3328 mL | 1.6640 mL | 3.3280 mL |

Please refer to the solubility information to select the appropriate solvent.

**In Vivo**

1. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (8.32 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

9-Hydroxyoctadecanoic acid (9-HSA) is an HDAC1 inhibitor that inhibits -66.4% HDAC1 enzymatic activity at 5 μM. 9-Hydroxyoctadecanoic acid shows anticancer activity[1].

**$IC_{50}$ & Target**

HDAC1

**In Vitro**

9-Hydroxyoctadecanoic acid (9-HSA) can bind to the active site of the three-dimensional model of the human HDAC1 protein [1].

9-Hydroxyoctadecanoic acid (9-HSA) (100 μM; 24 h) inhibits HT29 cell proliferation, induces arrest in G0/G1, and increases $p21^{WAF1}$ expression both at the transcriptional and the translational levels[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Proliferation Assay9-Hydroxyoctadecanoic acid ⊠⊠⊠⊠⊠⊠ HDAC1 ⊠⊠⊠⊠⊠⊠⊠⊠⊠⊠⊠[1]⊠

| | |
|---|---|
| Cell Line: | HT29 cell |
| Concentration: | 100 μM |
| Incubation Time: | 24 h |
| Result: | Resulted in a significant inhibition of cell proliferation. |

Cell Cycle Analysis9-Hydroxyoctadecanoic acid ▯▯▯▯▯▯▯ HDAC1 ▯▯▯▯▯▯▯▯▯▯▯▯▯[1]▯

| | |
|---|---|
| Cell Line: | HT29 cell |
| Concentration: | 100 μM |
| Incubation Time: | 24 h |
| Result: | Decreased S-phase activity by 50.2% compared with untreated controls, and the growth inhibition was associated with a strong arrest in G0/G1. |

Western Blot Analysis9-Hydroxyoctadecanoic acid ▯▯▯▯▯▯▯ HDAC1 ▯▯▯▯▯▯▯▯▯▯▯▯▯[1]▯

| | |
|---|---|
| Cell Line: | HT29 cell |
| Concentration: | 100 μM |
| Incubation Time: | 24 h |
| Result: | Increased the expression of $p21^{WAF1}$. |

RT-PCR9-Hydroxyoctadecanoic acid ▯▯▯▯▯▯▯ HDAC1 ▯▯▯▯▯▯▯▯▯▯▯▯▯[1]▯

| | |
|---|---|
| Cell Line: | HT29 cell |
| Concentration: | 100 μM |
| Incubation Time: | 24 h |
| Result: | Induced $p21^{WAF1}$ tanscript. |

## REFERENCES


[1]. Calonghi N, et al. Histone deacetylase 1: a target of 9-hydroxystearic acid in the inhibition of cell growth in human colon cancer. J Lipid Res. 2005 Aug;46(8):1596-603.

[2]. Calonghi N, et al. 9-Hydroxystearic acid upregulates p21(WAF1) in HT29 cancer cells. Biochem Biophys Res Commun. 2004 Jan 30;314(1):138-42.



**Caution: Product has not been fully validated for medical applications. For research use only.**



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