PTACH

Cat. No.: HY-12954

CAS No.: 848354-66-5

Molecular Formula: $C_{20}H_{26}N_2O_2S_2$

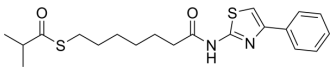
Molecular Weight: 390.56

Target: HDAC; HIV

Pathway: Cell Cycle/DNA Damage; Epigenetics; Anti-infection

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 : 50 mg/mL (128.02 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.5604 mL	12.8021 mL	25.6043 mL
	5 mM	0.5121 mL	2.5604 mL	5.1209 mL
	10 mM	0.2560 mL	1.2802 mL	2.5604 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (6.40 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.40 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

PTACH (NCH-51) is a potent HDAC inhibitor with IC_{50}s of 48 nM, 32 nM, and 41 nM for HDAC1, HDAC4, and HDAC6, respectively. PTACH exerts potent growth inhibition against various cancer cells (EC_{50}s of 1.1-9.1 μM) [1][2].

IC_{50} & Target

HDAC1	HDAC4	HDAC6	HIV-1
48 nM (IC_{50})	32 nM (IC_{50})	41 nM (IC_{50})	

In Vitro

PTACH (compound 51) treatment elevates the levels of acetylated histone H4 and $p21^{WAF1/CIP1}$ in a dose-dependent manner [1].

In cancer cell growth inhibition assay, PTACH (compound 51) shows strong activity. PTACH inhibits various cancer cells with EC50 values of 2.3 μM, 9.1 μM, 3.0 μM, 2.6 μM, 1.1 μM, 4.5 μM, 2.4 μM, 5.0 μM, and 4.5 μM for MDA-MB-231, SNB-78, HCT116,

NCI-H226, LOX-IMVI, SK-OV-3, RXF-631L, St-4, and DU-145 cells, respectively[1].
PTACH (NCH-51) augments the HIV-1 production in latently infected OM10.1 cells and such reactivation is associated with a loss of HDAC1 occupancy and subsequent hyperacetylation of histones in nuc-1 at the HIV-1 promoter[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis[1]

Cell Line:	HCT 116 cells
Concentration:	1 μM, 5 μM, 25 μM
Incubation Time:	8 hours
Result:	Gave rise to elevated and dose-dependent levels of acetylated histone H4 and p21 WAF1/CIP1.

REFERENCES

[1]. Suzuki T, et al. Novel inhibitors of human histone deacetylases: design, synthesis, enzyme inhibition, and cancer cell growth inhibition of SAHA-based non-hydroxamates. J Med Chem. 2005 Feb 24;48(4):1019-1032.

[2]. Ann Florence B Victoriano, et al. Novel histone deacetylase inhibitor NCH-51 activates latent HIV-1 gene expression. FEBS Lett. 2011 Apr 6;585(7):1103-11.

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