Crebinostat

Cat. No.: HY-116818

CAS No.: 1092061-61-4

Molecular Formula: $C_{20}H_{23}N_3O_3$

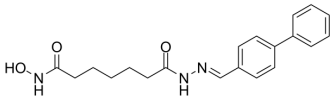
Molecular Weight: 353.41

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 (282.96 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.8296 mL	14.1479 mL	28.2957 mL
5 mM	0.5659 mL	2.8296 mL	5.6591 mL
10 mM	0.2830 mL	1.4148 mL	2.8296 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 (7.07 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (7.07 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (7.07 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Crebinostat is a potent histone deacetylase (HDAC) inhibitor with IC_{50} values of 0.7 nM, 1.0 nM, 2.0 nM and 9.3 nM for HDAC1, HDAC2, HDAC3 and HDAC6, respectively. Crebinostat potently induces acetylation of both histone H3 and histone H4 as well as enhances the expression of the cAMP response element-binding protein (CREB) target gene Egr1. Crebinostat increases the density of synapsin-1 punctae along dendrites in cultured neurons. Crebinostat can modulate chromatin-mediated neuroplasticity and exhibits enhanced memory in mice[1].

IC_{50} & Target	HDAC1	HDAC2	HDAC3	HDAC6

	0.7 nM (IC_{50})	1.0 nM (IC_{50})	2.0 nM (IC_{50})	9.3 nM (IC_{50})

In Vitro

Crebinostat (1 μM; 24 h) induces acetylation of AcH4K12 and AcH3K9 in mouse primary neuronal cells[1].
Crebinostat (1 μM; 24 h) downregulates Mapt mRNA expression, and upregulates Hspa1b (Hsp70) and Bdnf mRNA expression in mouse primary cultured neurons[1].
Crebinostat (1 μM; 24 h) increases histone acetylation and synapsin I punctae along dendrites in primary cultured neurons[1].

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

Western Blot Analysis[1]

Cell Line:	Mouse primary neuronal cells (dissociated from E17 embryonic mouse forebrain)
Concentration:	1 μM
Incubation Time:	24 h
Result:	Induced robust acetylation of AcH4K12 and AcH3K9 in a dose dependent manner with EC_{50}s of 0.29 μM and 0.18 μM.

In Vivo

Crebinostat (25 mg/kg; IP; for 10 days) enhances memory of contextual fear conditioning in mice; induces an increase in total hippocampal acetylation of H4K12 and H3K9[1].

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

Animal Model:	Male C57BL/6J mice (9-10 weeks)[1]
Dosage:	25 mg/kg
Administration:	IP; alternate daily between left and right sides of the abdomen, for 10 days
Result:	Enhanced memory of contextual fear conditioning in mice; induced a trend towards an increase in total hippocampal acetylation of both H4K12 and H3K9.

REFERENCES

[1]. Fass DM, et al. Crebinostat: a novel cognitive enhancer that inhibits histone deacetylase activity and modulates chromatin-mediated neuroplasticity. Neuropharmacology. 2013 Jan;64:81-96.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA