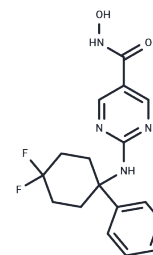


ACY-1083

Chemical Properties

CAS No. : 1708113-43-2
 Formula: C17H18F2N4O2
 Molecular Weight: 348.35
 Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.



Biological Description

Description	ACY-1083 is a small molecule inhibitor, a highly selective HDAC6 inhibitor (IC ₅₀ =3 nM), with 260-fold higher selectivity over other classes of HDAC isoforms. It is brain-penetrant and used for research on chemotherapy-induced peripheral neuropathy.
Targets(IC ₅₀)	HDAC
In vitro	<p>Methods: Air-liquid interface cultures of bronchial epithelial cells derived from COPD patients were treated with 10 μM ACY-1083, and stimulated with TNF, TGF-β, cigarette smoke, or bacteria. Epithelial barrier function (TEER, FITC-dextran permeability), inflammatory factors (MSD, qPCR), morphology (AB/PAS staining), and ciliary function were detected.</p> <p>Results: ACY-1083 significantly reduced stimulus-induced permeability increase, decreased release of inflammatory factors such as IL-6 and CCL2, protected epithelial morphology and ciliary function, and maintained mucus clearance.[1]</p>
In vivo	<p>Methods: In adult male SD rat models, ACY-1083 (3 mg/kg) was administered orally to detect its reversal effect on paclitaxel-induced mechanical allodynia; in C57BL/6j mice, ACY-1083 (5 mg/kg) was administered via intraperitoneal injection for pharmacokinetic analysis, detecting blood drug concentration, half-life, and biologically effective plasma exposure time.</p> <p>Results: ACY-1083 reversed paclitaxel-induced mechanical allodynia. ACY-1083 exhibited a maximum blood concentration (C_{max}) of 936 ng/mL, a half-life (T_{1/2}) of 3.5 hours, and 8 hours of biologically effective plasma exposure time. [1]</p> <p>Methods: In C57BL/6j mouse models, ACY-1083 (10 mg/kg) was administered via intraperitoneal injection to detect its alleviating effect on cisplatin-induced mechanical allodynia.</p> <p>Results: ACY-1083 effectively alleviated cisplatin-induced mechanical allodynia. [2]</p>

Solubility Information

Solubility	DMSO: 237.5 mg/mL (681.79 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 5 mg/mL (14.35 mM),Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one.</i>

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In vivo Formulation	<i>Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.8707 mL	14.3534 mL	28.7068 mL
5 mM	0.5741 mL	2.8707 mL	5.7414 mL
10 mM	0.2871 mL	1.4353 mL	2.8707 mL
50 mM	0.0574 mL	0.2871 mL	0.5741 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Horndahl, Jenny et al. HDAC6 inhibitor ACY-1083 shows lung epithelial protective features in COPD. PloS one vol. 17,10 e0266310. 12 Oct. 2022.

Krukowski K, et al. HDAC6 inhibition effectively reverses chemotherapy-induced peripheral neuropathy. Pain. 2017 Jun;158(6):1126-1137.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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