ACY-738

Catalog No.C13561 Batch:C1356103

Product Datasheet

Technical Data

Formula	$C_{14}H_{14}N_4O_2$					
Molecular Weight	270.29	**CAS No.**	1375465-91-0			
Solubility (25°C)*	In vitro	DMSO	54 mg/mL (199.78 mM)			
		Ethanol	1 mg/mL (3.69 mM)			
		Water	Insoluble			
	In vivo (Add solvents to the product individually and in order)	Oral Administration	Homogeneous suspension	CMC-NA	≥5mg/ml	Taking the 1 mL working solution as an example, add 5 mg of this product to 1 ml of CMC-Na solution, mix evenly to obtain a homogeneous suspension with a final concentration of 5 mg/ml.
		Injection		5%DMSO [1]→ 40%PEG300 [2]→ 5%Tween80 [3]→ 50%ddH2O Validated by Capsid Bio labs. Should you need adjustments to this formulation, contact our sales team for custom testing.	2.700mg/ml (9.99mM)	
				5% DMSO [1]→ 95% Corn oil Validated by Capsid Bio labs. Should you need adjustments to this formulation, contact our sales team for custom testing.	0.400mg/ml (1.48mM)	

* <1 mg/ml means slightly soluble or insoluble.
* Please note that Capsid Bio tests the solubility of all compounds in-house, and the actual solubility may differ slightly from published values. This is normal and is due to slight batch-to-batch variations.
* Room temperature shipping (Stability testing shows this product can be shipped at 2-8°C for storage purposes.)

Preparing Stock Solutions

Volume / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.6997 mL	18.4986 mL	36.9973 mL
5 mM	0.7399 mL	3.6997 mL	7.3995 mL
10 mM	0.3700 mL	1.8499 mL	3.6997 mL
50 mM	0.0740 mL	0.3700 mL	0.7399 mL

Biological Activity

Description	ACY-738 inhibits **HDAC6** with low nanomolar potency (IC50=1.7 nM) and a selectivity of 60- to 1500-fold over class I HDACs.
Targets	HDAC6 [1] (Cell-free) 1.7 nM
In vivo	ACY-738 induces dramatic increases in α-tubulin acetylation in brain and stimulate mouse exploratory behaviors in novel, but not familiar environments. This compound has the antidepressant-like properties. Elimination of this chemical from plasma is rapid, with plasmatic half-life of 12 min and concentration below 10 ng/ml after 2 h. It rapidly distributes to the brain leading to a total drug exposure in CNS comparable to that of peripheral tissues[1]. This agent decreases several characteristics of SLE (Systemic lupus erythematosus) in NZB/W mice by dictating B cell development in the bone marrow. Its treatment increases the percentage of B cells in early developmental stages, while decreasing the percentage of cells in late pre-B cell fraction F. The compound's regulation of BM B cell development could be due to regulation developmental checkpoints known to be dysfunctional during SLE[2].

Protocol (from reference)

Cell Assay:[1]

- **Cell lines**
  Undifferentiated RN46A-B14 cells
- **Concentrations**
  2.5 μM
- **Incubation Time**
  4 h
- **Method**
  Undifferentiated RN46A-B14 cells, a line of immortalized rat raphe neuronal precursors, are grown. They are treated with 2.5 μM ACY-738, this compound, tubastatin A, or 0.6 μM TSA, or vehicle (0.1% DMSO) for 4 h. Samples are processed using Epigentek histone extraction kit and quantified using protein assay.

Animal Study:[1]

- **Animal Models**
  Male NIH Swiss mice
- **Dosages**
  5 mg/kg
- **Administration**

	i.p.

References

https://pubmed.ncbi.nlm.nih.gov/23954848/ https://pubmed.ncbi.nlm.nih.gov/26604012/

RETURN POLICY

Capsid Bio's Unconditional Return Policy ensures a smooth online shopping experience for our customers. If you are in any way unsatisfied with your purchase, you may return any item(s) within 7 days of receiving it. In the event of product quality issues, either protocol related or product related problems, you may return any item(s) within 365 days from the original purchase date. Please follow the instructions below when returning products.

SHIPPING & STORAGE

Capsid Bio products are transported at room temperature. If you receive the product at room temperature, please rest assured, the Capsid Bio Quality Inspection Department has conducted experiments to verify that the normal temperature placement of one month will not affect the biological activity of powder products. After collecting, please store the product according to the requirements described in the datasheet. Most Capsid Bio products are stable under the recommended conditions.

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