MCU-i4

Catalog No.C14498 Batch:C1449803

Product Datasheet

Technical Data

Formula	$C_{23}H_{27}N_3O_2$					
Molecular Weight	377.48	**CAS No.**	371924-24-2			
Solubility (25°C)*	In vitro	Ethanol	76 mg/mL (201.33 mM)			
		DMSO	10 mg/mL (26.49 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	Clear solution	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.	0.750mg/ml (1.99mM)	Taking the 1 mL working solution as an example, add 50 μL of 15 mg/ml clarified DMSO stock solution to 400 μL of PEG300, mix evenly to clarify it; add 50 μL of Tween80 to the above system, mix evenly to clarify; then continue to add 500 μL of ddH2O to adjust the volume to 1 mL. The mixed solution should be used immediately for optimal results.

* <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

Concentration \ Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.6491 mL	13.2457 mL	26.4915 mL
5 mM	0.5298 mL	2.6491 mL	5.2983 mL
10 mM	0.2649 mL	1.3246 mL	2.6491 mL
50 mM	0.0530 mL	0.2649 mL	0.5298 mL

Biological Activity

Description	MCU-i4 is a negative modulator of the **mitochondrial calcium uniporter (MCU)** complex that directly binds a specific cleft in MICU1 and decreases mitochondrial Ca2+ influx.
Targets	MCU1 [1]
In vitro	MCU-i4 decreases mitochondrial Ca2+ influx. Docking simulations reveal that this compound directly binds a specific cleft in MICU1, a key element of the MCU complex that controls channel gating. Accordingly, in MICU1-silenced or deleted cells, the inhibitory effect of this chemical is lost. Moreover, it fails to inhibit mitochondrial Ca2+ uptake in cells expressing a MICU1 mutated in the critical amino acids that forge the predicted binding cleft.[1]

Protocol (from reference)

Cell Assay:[1]

- **Cell lines**
  C2C12 myoblasts
- **Concentrations**
  10 μM
- **Incubation Time**
  24 h
- **Method**
  Growing medium of 90% confluent C2C12 myoblasts is replaced with DMEM containing 2%-heat inactivated horse serum (HS) (differentiation medium). Five days later, cells are incubated for 24 h with MCU-i4 (10 μM) or with DMSO alone (0.1% v/v). At the end of the experiment, myotubes images are taken and myotubes width is measured by means of ImageJ software.

References

https://pubmed.ncbi.nlm.nih.gov/32075766/

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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