SH-BC-893

Cat. No.: HY-124758

CAS No.: 1841409-92-4

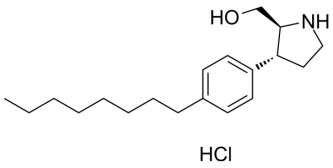
Molecular Formula: $C_{19}H_{32}ClNO$

Molecular Weight: 325.92

Target: Mitochondrial Metabolism

Pathway: Metabolic Enzyme/Protease

Storage: -20°C, sealed storage, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (153.41 mM; Need ultrasonic)

Preparing Stock Solutions	Concentration \ Solvent \ Mass	1 mg	5 mg	10 mg
	1 mM	3.0682 mL	15.3412 mL	30.6824 mL
	5 mM	0.6136 mL	3.0682 mL	6.1365 mL
	10 mM	0.3068 mL	1.5341 mL	3.0682 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 (7.67 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (7.67 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (7.67 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

SH-BC-893 is an orally active anti-neoplastic sphingolipid analog. SH-BC-893 also protects from ceramide-induced mitochondrial dysfunction and corrects diet-induced obesity. SH-BC-893 can be used for the research of cancer and obesity [1][2].

In Vitro

SH-BC-893 starves cancer cells to death by down-regulating cell surface nutrient transporters and blocking lysosomal trafficking events[1].
SH-BC-893 (5 μM; 3 h) protects from ceramide-induced mitochondrial network fragmentation by disrupting intracellular trafficking[2].
SH-BC-893 (8.935 nM; 3 h) protects from ceramide-induced mitochondrial dysfunction[2].

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

Western Blot Analysis[1]

Cell Line:	p53 $^{flox/flox}$ MEFs
Concentration:	5 μM
Incubation Time:	3 h
Result:	Blocked palmitate-induced recruitment of DRP1 to mitochondria without affecting DRP1 protein levels.

Immunofluorescence[1]

Cell Line:	p53 $^{flox/flox}$ MEFs
Concentration:	5 μM
Incubation Time:	3 h
Result:	Blocked palmitate-induced recruitment of DRP1 to mitochondria.

In Vivo

SH-BC-893 (oral; 120 mg/kg; single) robustly and acutely blocks ceramide-induced mitochondrial dysfunction, correcting diet-induced obesity and its metabolic sequelae[1].

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

Animal Model:	C57BL/6J mice (Male)[1]
Dosage:	120 mg/kg
Administration:	Oral; single
Result:	Blocked palmitate- and ceramide-induced mitochondrial fission, preserved mitochondrial function, and prevented ER stress. Normalized mitochondrial morphology in the livers and brains of HFD-fed mice, improved mitochondrial function in white adipose tissue, and corrected aberrant plasma leptin and adiponectin levels. Restored normal body weight, glucose disposal, and hepatic lipid levels in mice consuming a HFD.

REFERENCES

[1]. Kubiniok, Peter et al. Dynamic Phosphoproteomics Uncovers Signaling Pathways Modulated by Anti-oncogenic Sphingolipid Analogs. Molecular & cellular proteomics : MCP vol. 18,3 (2019): 408-422.

[2]. Jayashankar, Vaishali et al. Drug-like sphingolipid SH-BC-893 opposes ceramide-induced mitochondrial fission and corrects diet-induced obesity. EMBO molecular medicine vol. 13,8 (2021): e13086.

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