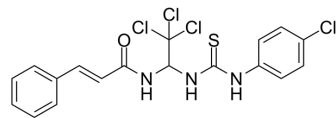


Sal003

Cat. No.:	HY-15969		
CAS No.:	1164470-53-4		
Molecular Formula:	C ₁₈ H ₁₅ Cl ₄ N ₃ OS		
Molecular Weight:	463.21		
Target:	Phosphatase; Apoptosis		
Pathway:	Metabolic Enzyme/Protease; Apoptosis		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	2 years
		-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (215.88 mM)
 * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent		Mass		
	Concentration		1 mg	5 mg	10 mg
	1 mM		2.1588 mL	10.7942 mL	21.5885 mL
	5 mM		0.4318 mL	2.1588 mL	4.3177 mL
	10 mM		0.2159 mL	1.0794 mL	2.1588 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
 Solubility: 2.5 mg/mL (5.40 mM); Suspended solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 90% corn oil
 Solubility: ≥ 2.5 mg/mL (5.40 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Sal003 is a potent, specific and cell-permeable inhibitor of the eukaryotic translation initiation factor 2α (eIF2α) phosphatase. Sal003 is a derivative of salubrinal^[1].

IC₅₀ & Target

eIF2α phosphatase^[1]

In Vitro

Sal003 (20 μM; 1-12 hours) sharply increases eIF2α phosphorylation in mouse embryonic fibroblasts (MEFs)^[2]. Eukaryotic translation initiation factor 2α (eIF2α) phosphorylation by Sal003 (10 μM; 1 hour) enhances subtilase cytotoxin (SubAB)-induced apoptotic signaling^[1]. Sal003 promotes eIF2α phosphorylation leads to impairment of synaptic plasticity and memory^[1].

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

Apoptosis Analysis^[2]

Cell Line:	HeLa cells
Concentration:	10 μ M
Incubation Time:	1 hour
Result:	Phosphorylated eIF2 α and thus enhanced SubAB-induced apoptotic signaling.

Western Blot Analysis^[1]

Cell Line:	Mouse embryonic fibroblasts (MEFs)
Concentration:	20 μ M
Incubation Time:	1 hour, 3 hours, 6 hours, 12 hours
Result:	Sharply increased eIF2 α phosphorylation in mouse MEFs.

In Vivo

Sal003 (20Mm; intrahippocampal injection; 8 minutes) impairs contextual memory in vivo^[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Rats (300-325g) ^[1]
Dosage:	20 μ M
Administration:	Intrahippocampal injection; 8 minutes
Result:	Impaired contextual memory.

CUSTOMER VALIDATION

- Nature. 2023 Sep;621(7977):188-195.
- Theriogenology. February 2022, Pages 117-127.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Costa-Mattioli M, et al. eIF2 α phosphorylation bidirectionally regulates the switch from short- to long-term synaptic plasticity and memory. Cell. 2007 Apr 6;129(1):195-206.

[2]. Yahiro K, et al. Regulation of subtilase cytotoxin-induced cell death by an RNA-dependent protein kinase-like endoplasmic reticulum kinase-dependent proteasome pathway in HeLa cells. Infect Immun. 2012 May;80(5):1803-14.

Caution: Product has not been fully validated for medical applications. For research use only.

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