Rhodiosin

Cat. No.: HY-N2425

CAS No.: 86831-54-1

Molecular Formula: $C_{27}H_{30}O_{16}$

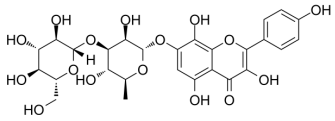
Molecular Weight: 610.52

Target: Cholinesterase (ChE)

Pathway: Neuronal Signaling

Storage: 4°C, protect from light

* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 33.33 mg/mL (54.59 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.6379 mL	8.1897 mL	16.3795 mL
	5 mM	0.3276 mL	1.6379 mL	3.2759 mL
	10 mM	0.1638 mL	0.8190 mL	1.6379 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 (4.09 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (4.09 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Rhodiosin is a double inhibitor of CYP2D6 and AChE, and can be isolated from Rhodiolis rhodiolis root. The IC_{50} for CYP2D6 is 0.761 μM, and the K_i is 0.769 μM. Rhodiosin has antioxidant and neuroprotective activity and can regulate HIF-1α signaling pathway to protect the central nervous system[1][2][3][4]

IC_{50} & Target

AChE

In Vitro

Rhodiosin (10 μM, 24 h) regulates the protective effect of the central nervous system by affecting the HIF-1α signaling pathway [3].

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

Western Blot Analysis [3]

Cell Line:	BV-2 and PC-12
Concentration:	10 μM
Incubation Time:	24 h
Result:	Reduced HIF-1α degradation in BV-2 and PC-12 cells under normoxia, and enhanced the expression of HIF-1α protein in PC-12 cells under hypoxic conditions.

In Vivo

Rhodiosin (100 mg/kg, Oral gavage (p.o.), once a day for 10 days) can reduce MDA content in irradiated C57BL mice models and reduce liver damage induced by radiation[4].

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

Animal Model:	Irradiation C57BL mice model[4]
Dosage:	100 mg/kg, once a day for 10 days
Administration:	Oral gavage (p.o.)
Result:	Reduced MDA content in the liver induced by irradiation.

REFERENCES

[1]. Yan X, et al. Salidroside orchestrates metabolic reprogramming by regulating the Hif-1α signalling pathway in acute mountain sickness. Pharm Biol. 2021 Dec;59(1):1540-1550.

[2]. Kwon H J, et al. Rhodiosin, an antioxidant flavonol glycoside from Rhodiola rosea. Journal of the Korean Society for Applied Biological Chemistry, 2009, 52: 486-492

[3]. Xu W, et al. Two potent cytochrome P450 2D6 inhibitors found in Rhodiola rosea. Pharmazie. 2013 Dec;68(12):974-6.

[4]. Li FJ, et al. Molecular interaction studies of acetylcholinesterase with potential acetylcholinesterase inhibitors from the root of Rhodiola crenulata using molecular docking and isothermal titration calorimetry methods. Int J Biol Macromol. 2017 Nov;104(Pt A):527-532.

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