Cipepofol

Cat. No.: HY-116152

CAS No.: 1637741-58-2

Molecular Formula: $C_{14}H_{20}O$

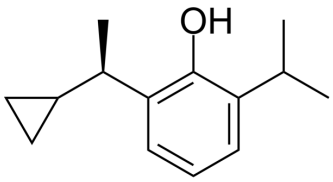
Molecular Weight: 204.31

Target: GABA Receptor; Sirtuin; Keap1-Nrf2; Apoptosis

Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling; Cell Cycle/DNA Damage; Epigenetics; NF-κB; Apoptosis

Storage:

Pure form	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (489.45 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	4.8945 mL	24.4726 mL	48.9452 mL
5 mM	0.9789 mL	4.8945 mL	9.7890 mL
10 mM	0.4895 mL	2.4473 mL	4.8945 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 (12.24 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (12.24 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (12.24 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Cipepofol (Ciprofol), a novel 2,6-disubstituted phenol derivative, is a positive allosteric modulator and direct agonist of the $GABA_A$ receptor. Cipepofol can cause the central nerve inhibition and promote sleep based on the structural modification of Propofol (HY-B0649). Cipepofol can activate the sirtuin1 (Sirt1)/Nrf2 pathway. Cipepofol protects the heart against Isoproterenol (ISO; HY-B0468)-induced myocardial infarction by reducing cardiac oxidative stress, inflammatory response and cardiomyocyte apoptosis[1][2].

In Vitro	Cipepofol (Ciprofol) can trigger chloride influx by competitive binding to butylbicyclophosphorothionate and t-butylbicycloorthobenzoate targets in the chloride channels of GABAA receptors. The influx of chloride can cause hyperpolarization of nerve cell membranes by increasing the intracellular chloride concentration and further activating GABAergic neurons to achieve central nerve inhibition[1]. Cipepofol (5 μM before ISO insult for 6 h) blunts the contents of CK-MB, LDH and cTnT were increased in ISO-treated H9c2 cells. Cipepofol attenuates ISO-induced cardiomyocyte apoptosis in vitro[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Cipepofol (Ciprofol; 100 μL; implanted into the abdomen of mice 1 h before ISO) suppresses ISO-induced myocardial damage, cardiac dysfunction, and inflammation and cardiomyocyte apoptosis[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Eighty male C57BL/6 mice (20-24 g, 8-10 weeks)[2]
Dosage:	100 μl
Administration:	Implanted into the abdomen of mice 1 h before ISO
Result:	Attenuated increased the content of serum CK-MB, LDH, and cTnT by ISO insults (100 mg/kg; sc; for 2 consecutive days to induce experimental myocardial infarction). Significantly improved ISO-induced LV systolic and diastolic dysfunction. Largely suppressed the increases in IL-6 IL-17 and TNF-α expression.

REFERENCES

[1]. Yunzhao Yang, et al. Ciprofol attenuates the isoproterenol-induced oxidative damage, inflammatory response and cardiomyocyte apoptosis. Front Pharmacol. 2022 Nov 22:13:1037151.

[2]. Ming Lu, et al. Ciprofol: A Novel Alternative to Propofol in Clinical Intravenous Anesthesia? Biomed Res Int. 2023 Jan 19:2023:7443226.

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